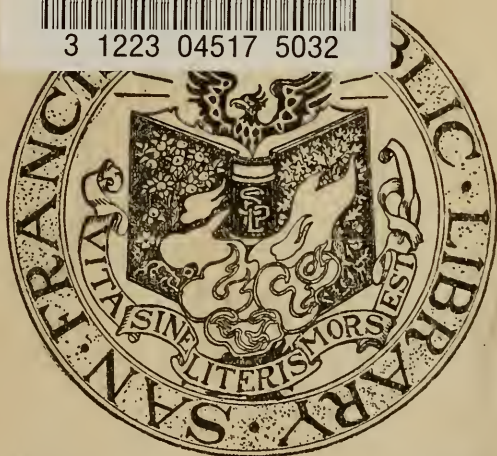


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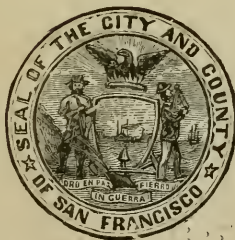
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3/25/96

ANNUAL REPORT
OF THE
PUBLIC SCHOOLS
OF THE
CITY AND COUNTY OF SAN FRANCISCO

FOR THE
School and Fiscal Year Ending June 30, 1895



SAN FRANCISCO
THE HINTON PRINTING COMPANY, 321 SACRAMENTO STREET
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REPORT
OF THE
SUPERINTENDENT OF COMMON SCHOOLS.

*To the Honorable Board of Education
Of the City and County of San Francisco:*

GENTLEMEN: Herewith please find report for year ending June, 1895. But for the sickness and subsequent death of Superintendent Moulder, this would have appeared as his report. He had devoted much time and thought to a study of the conditions of the schools, and had he lived would have written a report full of wise and helpful suggestions.

PERSONAL.

It is with no small degree of embarrassment that I assume the duties of an office that has been filled by such men as Denman, Mann, Anderson, Swett and Moulder. No one who has not undertaken it knows how great the responsibility. To fill such a position even conscientiously, not to say ably, requires no small degree of wise forethought and careful discretion. A Superintendent of Schools in a large city finds it quite as difficult to tell what not to do as what to do. Any one can tear down and terrorize, but it remains for few to build with wisdom and courage.

In this connection, permit me to say that my highest ambition is to assist in some degree in the creation of higher ideals among Principals and teachers, and thus secure to the children in

our schools such instruction as shall fit them for the highest type of American citizenship.

KEEP FAITH WITH TEACHERS.

At the close of the school year 1893-94, the Board of Education passed the following resolution:

RESOLVED, That, except where it would work a manifest injustice, it is the sense of this Board that the present schedule of salaries be continued in force for the fiscal year 1894-95.

It was with such an assurance as this that the teachers went to their vacation, to return in six weeks to find their salaries cut. The reduction was not much, it is true, but enough to show bad faith. It was not the amount, but the manner, of the cut that was disheartening.

Notwithstanding this discouragement at the outset, the year has been one of painstaking, intelligent devotion to duty. And may I say, in this connection, that after nearly eight years of very careful, discriminating, critical observation of the daily work of the San Francisco teachers, I know them to be a high-minded, faithful, conscientious, capable body of men and women. They are worthy the fullest confidence and highest appreciation.

THE TEACHER'S WORK.

There is no work in which a human being can engage that is such a tax upon one's whole strength as the teacher's. To furnish and adapt the mental and moral food of fifty earnest, wide-awake, inquiring girls and boys, is a draft upon the energies that teachers themselves seldom fully understand. Many a teacher drops out of the ranks and is marked absent at roll-call, because the tax upon nerve and brain cannot be met.

Nothing can over-magnify the importance of the teacher's work. No one leaves such a legacy to the world as does a capable, conscientious teacher. No work so thoroughly exhausts the very nerve force and leaves threadbare every fiber of one's life as does the teacher's. Let it be said with earnestness and force that every turn in the management of the schools of a great city affects for good or evil the children who attend them. Disturb your teaching force and its effect reaches the children's education. No class of workers, no profession, comes so near to the future

life of the nation as do the four hundred thousand teachers who direct the thought of nearly twelve million American children. Let the official whom accident may clothe with a little brief authority beware of how he exercises it, lest he dwarf what he should strive to develop.

TEACHERS' PAY.

BOSTON, November 1, 1895.

DEAR SIR: The Atlantic Monthly, following its plan of paying especial attention to educational subjects, will take up for discussion "The Status of the Teacher," and consider how the profession may be made a calling of greater dignity and of more suitable reward; for, clearly, teaching is not held in as high honor as it ought to be. It is doubtful, indeed, if the public-school system will reach its proper efficiency until in every community the teacher's status is as high as the status of any other profession.

To lift the teacher into the highest esteem, two things are necessary:

(1) To give efficient teachers security in their positions and freedom to do their best work.

(2) To pay them salaries large enough to make the profession attractive to the very ablest men and women, NOT as a makeshift, but as a life career.

Very truly yours,

THE EDITORS OF THE ATLANTIC MONTHLY.

The above letter is one of many indications that point to the fact that in the near future the teachers of the country will receive, in some degree, at least, the substantial recognition that comes to other learned professions. There is no appreciation that carries with it so much of inspiration as good pay. No faithful, conscientious, capable teacher ever received a dollar she had not twice earned.

VENTILATION AND HEATING.

Ventilation and heating are so closely related to the welfare of our schools, and there is such an utter lack of anything like system, that I have thought it of sufficient importance to quote at length from a report issued by the Bureau of Education:

With all the attention that has been paid to ventilation, the sub-

ject has till quite recently been in its infancy, if even now it has attained anything like maturity. This fact is shown in the ill-ventilated and poorly-heated halls in all parts of this country and in Europe. It appears in nearly all the costly churches, where the provision for renewal of the air is quite generally wholly insufficient, and, in a majority of cases, not one-twentieth of what it should be. The reason that people are alive and in tolerable health is that they spend only a small fraction of their time in these halls and churches.

Many schoolhouses are but little better, and yet most of the children live through it because they go into the open air frequently at recesses, at noon, and morning and night, and the system habituates itself to throwing off the poison inhaled with the vitiated air of the schoolroom, just as a man becomes accustomed to the nicotine poison of tobacco and the alcoholic poison of whisky, and just as the human body has the power of adapting itself to the rigor of an Arctic winter, and again to the heat of a torrid summer. The Creator seems to have given us this power of adaptation in order that the race might not become extinct while we are learning how to avail ourselves of the free pure air everywhere supplied. But it will not do to presume too long on this adaptability. The evidence of degeneracy here and there warn us that it is high time to presume no longer.

And in private houses the case is generally even worse than in schoolhouses and public halls. The safety in these houses lies in the fact that but few people generally are confined in one room. It is likely that a very large majority of private houses are heated with stoves, and that in nine-tenths of them no provision whatever is made for changing the air of the room except the occasional opening of a door or a window and the withdrawal of a very small quantity of air through the draft of the stove.

CONDITIONS VARY.

In considering what is the best means for heating and ventilating, there are various conditions that must not be lost sight of. A large house heated by a furnace or by indirect steam, with a small family is one thing. A small house, heated by a stove, with a large family, is quite different. In both these the rooms, or a part of them, are occupied through the whole twenty-four hours. A schoolroom, on the other hand, is occupied only five or six hours in the day, but it is inhabited by a large number of children during that time. These children, moreover, are at the period of greatest growth. The tissues of the body are renewed rapidly, and the excretions through the skin and the exhalations from the lungs vitiate the air very rapidly. Furthermore, these children often come from houses not the most scrupulously clean; their clothes are sometimes filled with the odors that arise from cooking, for one

room has to serve for kitchen, dining-room and living room. In such a place boiled cabbage, fried onions, or garlic, sausage meat and doughnuts leave traces of perfume in the dresses of girls and in the jackets of boys. Nor should any one regard this fact "with a disdainful smile," for out of such surroundings have arisen men and women eminent in the republic. The fact is emphasized here only to show that schoolrooms where such men and women may be developed ought to have plenty of fresh air.

Difference of climate also is a condition which very much affects the problem of heating and ventilating schoolhouses and dwellings; and an essay designed for all portions of the country, while describing what may be needful for Minnesota and Maine, must be taken with large modifications when applied to the conditions of South Carolina or Southern California. But this modification is chiefly one of degree, and not a change in principles.

VITIATED AIR.

It is not the purpose here to enter into any scientific discussion of the constituents of foul air. It is rather the purpose to treat the subject in its practical aspects and in a popular way, and yet it is hoped that nothing will appear that is inconsistent with the science of the subject.

Popularly, then, it is said that the air which has been exhaled from the lungs contains a certain larger per cent. of carbonic acid gas, and this gas is known to be heavier than the pure air. It is this gas which settles at the bottom of a certain valley in France to the depth of two or three feet. Taken into the lungs of an animal, it causes death; hence a dog dies when he tries to walk through this valley, because he is immersed in the gas and can breathe no air, while a man walking through with his head above the stratum of carbonic acid gas and in the air, remains uninjured. The danger from this gas arises from the exclusion of air, and not so much from its poisonous nature. It is often asserted that in the process of ventilation the exhaust should be from the bottom of the room because this gas settles there. It is true that the exhaust should be from the bottom of the room, but not for this reason. The foul air of a schoolroom is not always or necessarily at the bottom of the room. It is at the top of the room under certain conditions, and perhaps more frequently than at the bottom. The impurity does not consist of carbonic acid alone; it consists of exhalations from the skin, of other substances thrown off from the lungs besides this gas, and of watery vapor. All this is at a temperature very nearly that of the lungs and the body, which is normally about 98½ degrees F., and hence it is lighter than the air of the room, and it tends to rise for that reason. Even the carbonic acid, which in its pure state is heavier

than air at the same temperature, being of a higher temperature and mixed with vapor and various impurities, rises to the top of the room at first, instead of settling to the floor.

This has been proved by the following experiment: A schoolroom was about 40 feet long and 25 or 30 feet wide. It was 10 feet high to a cornice *a*, just above the windows, and above the cornice the ceiling rose in a flat arch 3 or 4 feet to *b*. On the back side were half a dozen windows, on the front side were three doors, and at each end there was a fireplace with a good draft; on the back side of each fireplace, at the end, was a window, and on the front side was a door. The room was heated by a large stove. While the school was in session, the air was admitted from the halls through transoms over the doors and through the windows, which were lowered an inch or two; and it was exhausted through the fireplaces. The school closed at 1 o'clock, when the windows and doors were thrown open and the wind was allowed to sweep through the room all the afternoon. The room was then as sweet as the out-door air. At night the doors and windows were closed and the fire in the stove was allowed to smoulder; but in the morning the room was filled with the schoolhouse odor of foul breaths. At first this seemed unaccountable, but upon careful investigation it appeared that a stratum of warm and impure air had remained in the arch above the cornice during the afternoon, when the wind had swept through the lower part of the room, and as it cooled at night, this foul air had settled and diffused itself throughout the room. The discovery was made by mounting a ladder to hang a picture, and, putting the head into the stratum of air above the cornice just before closing the room for the night. This experiment shows, beyond a doubt, that the foul air will rise to the top of a heated schoolroom, and that this part needs ventilation not less than the bottom.

The conditions in this room would have been vastly improved if the windows had extended to the top of the arch, or if there had been a ventilating register at the top of the arch leading into the chimney flue. But the ventilator should have been closed during the day in this case, or else the heated air of the room would pass out rapidly at the top; and in case the windows were extended to the highest part of the ceiling the warm air would pass out in the same way, unless the openings were barely large enough to supply the air which was exhausted through the fireplaces.

RADIANT HEAT.

In a small room, there is no doubt that an open grate or a wood fire is the best means of heating and ventilation. The air is by this means radiated directly from the glowing coals; it strikes the furniture, walls, ceiling and floor of the room and warms them. The air is

warmed by contact with these objects, and not by radiant heat passing through it. The air for breathing is, therefore, comparatively cool, as it ought to be; it retains its natural moisture, and does not absorb from the nostrils, air passages and lungs so much of the moisture as to leave them in a dry, parched and unhealthy condition. The draft of the open fireplace changes the air in the room frequently, and, if the air is supplied through passages around the fireplace connected with the outside near the floor and opening near the top of the room above the fireplace, it is partially warmed in passing around the brick work behind the fireplace; and these conditions are nearly perfect.

But what is so admirable on a small scale, is not suited to a large room with many people in it. Too many fireplaces would be required, and in a large building of many rooms the care of these and the inevitable interruption which it would cause, to say nothing of the dust and ashes that would be scattered over the room, all make a great and unnecessary expense. The cost of fuel would also be enormous, for not more than one-eighth of the heat generated by the combustion would be available in the rooms; the other seven-eighths would pass up the chimney.

HEATING BY STOVES.

In a close room the air can be very economically heated by a stove of suitable size. The air is heated by contact with the heated iron of the stove, and its volume being increased by the rarefaction which heat produces, the air immediately rises to the top of the room and is replaced by the denser cold air, and this in turn becomes heated to rise and be replaced by more cold air. It will greatly facilitate this movement of the air, and the consequent heating of all parts of the room, to surround the stove by a jacket of sheet iron raised a few inches from the floor and distant five or six inches from the stove. The air passes under the jacket and up between it and the stove, and becomes heated in passing. The motion is much more rapid with the jacket, and those pupils who sit nearest the stove are by it relieved from the too great heat directly from the stove. Seats near the stove and those in the farthest part of the room thus become equally comfortable.

THE SPACE AND AMOUNT OF AIR PER MINUTE PER PUPIL.

In 1882 a commission of experts was appointed to report upon the school buildings in the District of Columbia. The following are their conclusions:

1. That all sides of the (school) building shall be freely exposed to light and air; for which purpose they shall not be less than sixty feet distant from any opposite building.

2. That not more than three of the floors—better only two—shall be occupied for classrooms.

3. That in each classroom not less than fifteen square feet of floor area shall be allowed to each pupil.

4. That in each classroom the window space shall not be less than one-fourth of the floor space, and the distance of the desk most remote from the window should not be more than one and one-half times the height of the top of the window from the floor.

5. That the height of the classroom should never exceed fourteen feet.

6. That the provisions for ventilation should be such as to provide for each person in a classroom not less than 30 cubic feet of fresh air per minute, which amount must be introduced and thoroughly distributed without creating unpleasant drafts or causing any two parts of the room to differ in temperature more than 2 degrees F., or the maximum temperature to exceed 70 degrees F. The velocity of the incoming air should not exceed two feet per second at any point where it is liable to strike on the person.

7. That the heating of the fresh air should be effected by indirect radiation.

8. That all (wardrobes or) closets for containing clothing or wraps should be thoroughly ventilated.

The importance of the last of these recommendations may be noted here for want of a more appropriate place. Both for the comfort of pupils on returning from school and for the sake of pure air in the schoolrooms, all the wraps, overshoes, hats, caps and umbrellas, and stockings on stormy days (an extra pair being kept at school for a change), should be deposited in a well-ventilated and heated room. In large buildings a part of the basement may be used for this purpose; and in schools for large children, a small, separate and well ventilated closet, about 12 by 18 inches, with a door and lock, should be supplied for each pupil. With smaller children, who need the oversight or the assistance of the teacher, the cloakrooms should adjoin the schoolroom.

It appears that about 200 cubic feet of air space should be provided for each pupil; the number of square feet of floor space for each should be 15. A schoolroom 30 by 25 by 13 feet would then seat about 40 pupils. For each of these, 30 cubic feet per minute of fresh warm air should be supplied, and the same quantity, of course, should be withdrawn from the room. All the air in the room would be changed in ten minutes. This air should not move at a greater velocity than 2 feet per second, or 120 feet per minute, where it is liable to strike the person. Eight feet or more above the floor it may move with greater velocity, or 200 feet a minute. This requires an opening of about 6 square feet, or 2 by 3 feet; and this opening would discharge easily a vertical flue of 2 by 2 feet, horizontal section.

In cold weather, when the difference in weight of the warm air and the cold is greatest, this velocity can easily be attained. In mild weather, however, the result is less positive. But in mild weather there is less difficulty about ventilation. The windows may be thrown open on warm days.

But to make this movement of air positive, and to remove all possibility of failure, the air may be moved by a fan, or blower. This can be so constructed that it may either force the air into all the chambers from a single fresh air supply, and deliver the requisite number of cubic feet per minute to each room, or it can be made to pull the air from each room through the exhaust flues or up the shaft, if all these flues are connected with a single shaft.

In forcing the air into the room through the radiators, it is found, first, that disagreeable drafts are caused, and that the air moves too rapidly to the opposite side of the room and along the ceiling; and, secondly, it is found that only about one-half of the warm air delivered to a room goes out through the ventilator. If the fan is used, on the other hand, to pull the air from the room through the exhaust flues, a much smaller quantity of air enters through the warm-air flues than is withdrawn through the exhaust; the balance finds its way into the room, unheated, through the doors and windows.

In order, then, to produce absolute perfection, and to deliver 30 cubic feet of warm air through the flue at the top of the room, and to withdraw an equal amount through the exhaust flue, two fans would have to be used, of equal capacity, and moving on the same shaft, or with uniform velocities; and this construction would not be difficult. But even here there would be this element of uncertainty: that the air from many rooms being withdrawn through a single shaft, more air, at a greater velocity, might be exhausted from one room than from another; and the same difficulty would occur with the warm air. Nothing short of a separate flue for each room, both for the supply and for the exhaust, and a blower in each to deliver and exhaust the required volume of air, would secure this absolute perfection. In addition to this, the temperature of the incoming air would need to be kept at the proper degree by some kind of an automatic regulator. Or, instead of the separate flues and fans for each room, the air could be forced in from one source by a single fan, and exhausted by another through a single shaft, as at first described; and the quantity of air passing through each register might be controlled by a governor placed in the flue and controlling the damper. Such an apparatus would not be difficult to construct.

But it is doubtful whether this supply of air needs to be reduced to so fine a point. With a heated shaft, and with heated air from furnaces or from steam coils, the results are probably as nearly perfect as this generation is prepared for.—[From Report of Instructor in Hygiene, Boston Public Schools.

The chief difficulty is defective ventilation. It is almost impossible to secure good ventilation by the natural method; that is to say, the movement of the outer atmosphere passing over the mouth of a ventilating-pipe or cupola does not draw the air out of a room or a building with sufficient force and rapidity to conduce to good ventilation. A chimney-flue may do its required work in this simple way; but the draft does not depend, except in a slight degree, upon the current of outer air blowing over the chimney-top, but rather because the column of air in the flue is heated by the smoke and fire, and, in obedience to a physical law, flows upward. We need not expect a like result in the case of a room simply provided with a ventilating-flue, assuming that, because a pipe leads out, the air will escape through it in sufficient volume. The proper ventilation of a schoolroom by that method is out of the question. And yet that is the system that was adopted in nearly all the school-buildings erected previous to a few years ago.

Wherever it is possible, I would recommend the introduction of a process of artificial ventilation superior to any other in the certainty of its work. It is known as the system of "exhaust ventilation" and has been adopted in all the large school-houses completed within the past three or four years. The air is drawn out of the room by the action of a revolving fan, worked by steam, and which is set in a box or chamber in the upper part of the building, near the roof, and into which empty all the ventiducts from the various study and dressing rooms. The rapid revolution of the fan-wheel, the blades being set at an angle, has the effect of lifting the air from below and forcing it through the opening in the roof. Neither contrary wind nor a quiet atmosphere, nor rain, nor storm affects the discharge of air, which must go on when the fan is in operation.

PENSION FOR TEACHERS.

After urging their claims with three successive legislatures, the teachers of California have secured the passage of an act that provides for the pensioning of teachers, who, through long years of service, have become incapacitated. Though the law is not altogether satisfactory, it is a beginning, and will ultimately result in great good. Four teachers have already taken advantage of its provisions.

COPY OF THE LAW :

AN ACT

TO CREATE AND ADMINISTER A PUBLIC SCHOOL TEACHERS' ANNUITY AND RETIREMENT FUND IN THE SEVERAL COUNTIES AND CITIES AND COUNTIES OF THE STATE.

The People of the State of California, Represented in Senate and Assembly, do enact as follows :

SECTION 1. The Superintendent of Public Schools, the County Treasurer and the Chairman of the Board of Supervisors of each county or city and county, and their successors in office, are hereby constituted a Board of Trustees of the "School Teachers' Annuity and Retirement Fund," to provide for the disbursement of the same and to designate the beneficiaries thereof, as hereinafter directed, which Board shall be known as the "School Teachers' Retirement Fund Commissioners."

SEC. 2. They shall organize as such Board by choosing one of their number as Chairman and one as Secretary. The County Treasurer shall be *ex officio* Treasurer of such fund. Such Board of Trustees shall have charge of and administer said fund and order payments therefrom according to the provisions of this Act. They shall report annually in the month of July to the Board of Supervisors the condition of such fund, and the receipts and the disbursements on account of the same, with a full and complete list of the beneficiaries of said fund, and the amounts paid to each of them.

SEC. 3. Whenever any teacher entitled to the benefits of this Act has taught in the public schools of this State for a period of twenty years, and shall become incapacitated from performing the duties of a teacher, such teacher shall, at his or her request, and may, in the discretion of the Board of School Trustees, without such request, be retired as a teacher, and shall thereafter receive an annuity out of said fund of forty-five dollars per month ; and if such teacher has taught for twenty-five years or over, shall, under the same circumstances, be retired on an annuity of fifty dollars per month, such payments to be made out of the fund in the different counties in proportion to the length of time taught by such teacher in each county ; but in case any teacher should be retired within three years after the passage of this Act, he or she must, in order to receive the benefits thereof, pay into the fund provided for in this Act the sum of three hundred dollars ; *and provided further*, that if at any time there shall not be sufficient money in said

fund to pay the warrants drawn thereon as presented for payment, the Treasurer shall register said warrants, and mark on the back of each these words: "Presented for payment this—(giving day, month and year) and not paid for want of funds."

Treasurer of ——— County.

and such warrants shall be paid in the order of registration and bear interest at five per cent. per annum from date of registration.

SEC. 4. The Board herein provided for shall hold quarterly meetings on the third Saturday of January, April, July and October of each year at the office of the County Superintendent of Public Schools. Such Board shall biennially, at its meeting in January, select from its members a President and Secretary. It shall issue warrants, signed by its President and Secretary, to the persons entitled thereto for the amount of money ordered paid to such persons from such fund by said Board, stating therein for what purpose said payment is made. It shall keep a record of all its proceedings, which shall be public. It shall at each quarterly meeting send to the Treasurer of the county, or city and county, and to the Auditor of such county, or city and county, a list of all persons, if any, entitled to payment out of the fund provided in this Act, stating the amount of such payments and for what granted, which lists shall be sworn to as correct by the President and Secretary of said Board, and the Auditor shall then enter a copy of said list in a book to be kept for him for that purpose, known as the "School Teachers' Annuity Fund Book." When such list has been entered in such book by the Auditor, he shall transmit the same to the Board of Supervisors of such county, or city and county, which Board shall order the payment of the amount named out of the fund provided for by this Act. A majority of the members of said Board shall constitute a quorum for the transaction of business.

SEC. 5. In addition to the powers hereinbefore granted to said Board, it shall have the further power, first, to subpoena and compel witnesses to attend and testify before it in all matters relating to the operation of this Act, and any member of said Board may administer an oath or affirmation to such witness, in the form prescribed in courts of justice; second, to provide for the payment, out of said fund, of all expenses, such as for printing, for stationery and for postage stamps, but the members of said Board, as such, shall serve without compensation; third, to make all such needful rules and regulations for the transaction of their business, from time to time, as may be necessary.

SEC. 6. To provide a fund for the payments provided for in this Act, the Secretary of the Board of Education of each municipality shall certify monthly to the Treasurer of such municipality, and the Board of Trustees in every school district outside of such municipalities, shall

certify and pay over in like manner to the County Treasurer of each county, and one per cent. of the amount due each teacher as salary for the previous month; and all moneys derived from any other source shall be paid to the County Treasurer to the credit of such fund. Such Board shall also receive and place to the credit of said fund all moneys received from donations, legacies, gifts, bequests or otherwise.

SEC. 7. This Act shall be binding [only] upon public school teachers [who,] after the [passage] of this Act, [shall] sign and deliver to the Board of Education of the municipality in which they are employed a notice in substantially the following form:

— — —, 1895.

To the Board of Education (or Trustee, as the case may be) *of* — — —:

You are hereby notified that I agree to be bound by, and desire to avail myself of the provisions of the Act of the Legislature of California, approved — — —, eighteen hundred and ninety-five, entitled "An Act to Create and Administer a School Teachers' Annuity and Retirement Fund" in the several counties and cities and counties in this State.

— — —
Public School Teacher.

And no teacher employed in the public schools of this State at the time of the passage of this Act failing to give such notice shall be entitled to any benefits under this Act [or] subject to any of its burdens. [And no teacher employed after the passage of this Act, who, within ninety days after such employment, fails to give such notice, shall share the benefits of or be subject to the burdens of this Act.]

Such notices shall be delivered to the Treasurer of such municipality, and a copy thereof to the Commissioners of said fund, and preserved as a record for their information.

SEC. 8. All Acts and parts of Acts in conflict with the provisions of this Act are hereby repealed.

SEC. 9. This Act shall take effect and be in force from and after its passage.

THE EDUCATIONAL VALUE OF MANUAL TRAINING.

A REPORT OF THE COMMITTEE ON PEDAGOGICS, PRESENTED BY
WILLIAM T. HARRIS, U. S. COMMISSIONER OF EDUCATION,
BEFORE THE NATIONAL COUNCIL OF EDUCATION, AT NASH-
VILLE, TENN., JULY, 1889.

The subject of the Educational Value of Manual Training has come to be of prime importance by reason of the strong claims set up for it by its advocates, and secondly, by reason of the fact that as a cause it serves to unite not only the critics of the educational system already existing, but also its uncompromising enemies; thirdly, because the claims set forth in its behalf are based, not on economic reasons, but on educational reasons, an assumption being actually made that the effect of manual training on the pupil is educational in the same sense as the branches of science and literature heretofore taught, or at least if different from them, of equal or of superior value to them. This assumption unsettles the entire question of course of study, in so far as it rests on the doctrine of a specific educational value for each of the branches of the course of study, and in so far as it is supposed that the present list of branches provides for an all-sided intellectual training.

Your committee accordingly have proposed to themselves in this report to discuss the various phases of this assumption, and to inquire in what precisely consists the educational value of the branches taught in the manual-training school, and wherein they are supplementary of the work already done, and wherein they cover the same ground. They have proposed to treat incidentally also the economic questions involved, inasmuch as the popularity of the movement has its foundation in the conviction that if the schools teach manual training, all pupils will be fitted for useful industries before the age of leaving school for business.

1. Your committee in the outset admit the reasonableness of substituting a system of manual training in special schools, in so far as it can be done, for the old system of apprenticeship. That said apprenticeship has been and is wasteful of the time and talents of the pupils, is conceded; that a school devoted to the business of educating the youth in the essentials of his trade or vocation is superior to the old system that employed the apprentice in all the drudgery of the establishment, and postponed his initiation in the essential matters of his trade. But your committee insist that such manual training ought not to be begun before the completion of the twelfth year of the pupil, nor before he has had such school instruction in the intellectual branches of school-work

—namely, in reading, writing, arithmetic, geography, grammar and history—as is usually required by those statute laws enforced in enlightened States to prevent the too early employment of minors in the industries, and the neglect of their school education. Your committee understand that any amount of manual training conducted in a school is no equivalent for the school education in letters and science, and ought not to be substituted for it. They hold the opinion, moreover, that neither apprenticeship nor the industrial school should be allowed to take possession of the youth until the completion of his twelfth year at least; the fifteenth year is still better, because physical maturity is necessary for the formation of the best muscular movements to produce skill. At too early an age the pupil with his small hands and fingers, his short and undeveloped arms, is obliged to acquire bad habits of holding the implements of labor, just as a child that commences holding a pen too early will not hold it so as to secure freedom of movement. Moreover, the serious occupations of life cannot be imposed on children without dwarfing their human nature, physically, intellectually and morally, and producing arrested development. Not only the games of youth, but the youth's freedom from the cares of mature life, should be insured to him if the best preparation is to be made for manhood. It is sad to know that very many children are dwarfed by family necessity, which compels them to bear the weights and cares of mature years. The street gamin in the city is preternaturally acute, but is not in process of growth towards ideal manhood. Later on he will be found suffering from premature old age, in every respect a wasted life burnt out before it could develop its moral and intellectual ideals. He will have a "Punch and Judy" face such as Dickens ascribes to the stunted products of London street education. Students of anthropology tell us that man surpasses the animals so much in his mature life because he has a so much longer period of helpless infancy. He passes through a hundred grades of ascent above the brute, using all his forces in learning to walk on his hind legs, to use articulate speech for inter-communication, to dress himself in clothes, and to put on that far subtler clothing of customs and usages which hold back and conceal his animal propensities and substitute courtesy towards others for selfish natural impulse. Were it not for this diversion of the forces of childhood, man might develop like the animals the ability to walk immediately after birth, and use his bundle of intellectual instincts at once without the necessity of a long process of education. On these grounds your committee deprecate the necessities which abridge the period of childhood, and consider this one of the first reforms which social science is demanding—namely, the protection of children from the premature assumption of the cares of life. The work of the kindergarten, the schools for waifs, and this line of effort will stop the growth of that hopeless class of society that has become arrested below the moral stage of development.

The ever-present argument of the economical view of education calls attention to the fact that the great majority of children are destined to earn their living by manual labor. Hence, it is argued, the school ought to prepare them for their future work. The scientific view that lays so much stress on the protraction of the period of human infancy, is opposed to this demand for filling the child's mind with premature care for his future drudgery. In fact, this scientific doctrine has already been anticipated by the humane Christian sentiment which has founded public schools; for there is a conviction deep-seated in the minds of the people that all children ought to be educated together in the humane studies that lie at the basis of liberal culture. Just for the very reason that the majority have before them a life of drudgery, the period of childhood, in which the child has not yet become of much pecuniary value for industry, shall be carefully devoted to spiritual growth, to training the intellect and will, and to building the basis for a larger humanity. Such a provision commends itself as an attempt to compensate in a degree for the inequalities of fortune and birth. Society shall see to it that the child who cannot choose the family in which he shall be born, shall have given him the best possible heritage that fortune could bring him—namely, an education that awakens him to the consciousness of the higher self that exists dormant in him. The common school shall teach him how to conquer fortune by industry and good habits, and the application of the tools of thought.

The economic, utilitarian opposition to the spiritual education in our schools comes before us to recommend that we forecast the horoscope of the child, and in view of his future possible life of drudgery make sure of his inability to ascend above manual toil by cutting off his purely intellectual training, and making his childhood a special preparation for industry.

Your committee would at this point call attention to the fatal omission on the part of the economist to see what is implied in his statement, that the schools should fit the child for his future duties in life. For when we inquire, we discover at once that the trade or vocation in life is but a small part of the total functions of anyone's life. It is what goes with the trade or vocation that makes even it a success or failure. What does one need to know besides his trade? To this question your committee enumerate the following:

1. Under the head of behavior toward others, his success will depend on his treatment of his fellow-workmen and his employers; on his treatment of his neighbors, and of his family and children. Moreover, his behavior as a citizen concerns vitally all who live with him under the same government; for he conditions to the extent of his single vote, and the proletariat class as a whole may form a majority and determine altogether what sort of government shall be placed over all, rich and

poor, Christian or heathen, humane or selfish. The "dude" citizen who inherits large wealth and believes that the laboring classes should not be educated beyond the station they are to occupy in life, will find that the manual laborers are also voters, and that they decide whether there shall be rights of private property or protection of life and limb for him as well as for others.

The illiterate manual laborer, no matter how skillfully educated for his trade in wood and metal operations, cannot read and write. He cannot read the newspaper and take interest in the doings of town, State and nation or world at large, except as he hears of it in the turbid stream of personal gossip from fellow-workmen. He is essentially shut in, and his thoughts move around in a narrow circle like the horse that turns the wheel of the mill. Nothing can prevent his being the victim of wild schemes of agitation that attack radically all the institutions of civilization. To the observer of the newer and newest phases of modern history, nothing is so clear as the fact that the first necessity of civilization is a system of universal education, not in industry, but in the ideas and thoughts that make up the conventional view of the world—such ideas and opinions as one learns in studying geography and history, and especially literature.

2. Your committee would now call your attention, in the second place, to the educative phases of manual training. They admit that manual training is an educative influence; for all that man does or experiences is educative to him, and affects both his will and his intellect. The education of the will takes place by fixing or unfixing habits of doing; the education of the intellect takes place through the ascent from one thought or idea to another; from a narrow point of view to a broader and more comprehensive one; from a vague and general grasp of a subject to an insight that explains all the details, and sees the relations of all parts to the whole.

In so far as manual-training schools teach the scientific principles that underlie the practical points of their work, they add intellectual education to physical education. Instruction in the natural sciences gives knowledge of nature, both as to its modes of existence and as to the forces that form and transform those modes of existence. Natural science, it will be readily admitted, is directly tributary to the emancipation of the laborer, because it leads more and more to the invention of machinery. Machinery does the drudgery of the work, and leaves to the laborer only the task of supervision; it assumes the physical labor, and gives him the intellectual labor of directing and managing it. The more complete the machine becomes, the more operations it includes in its process, the more intellect is required to manage it and the greater becomes its productiveness.

Compare the study of natural science in its general phases with its

special applications of the theory of special machines, and it is seen that the study of the more general is more highly educative; and your committee would call special attention to the principle on which this conclusion is based. That is more highly educative which lasts longest and has widest scope in its enlightening effects. The explanation of the special machine (the steam engine, for example) is an intellectual acquisition for to-day; and it gives one also a ready insight into all other examples to be met with in future experience. But the study of the theories of heat and of the dynamics of elastic fluid gives insight not only into the steam engine, but also into a thousand other applications (spouting geysers, oil wells, heating and ventilating houses, meteorology, for example) within one's experience, and numberless thousands of examples possible in future experience. Hence the study of pure science is more educative intellectually than the study of special applications of it.

Again, the study of applications of science is more educative than the labor of making the machine. The theory of its operation involves all realizations of it, and is not exhausted until all real and possible varieties of construction have been explained by it. But the construction of a machine adopts one of an indefinite number of styles of construction, uses one kind of material out of many for each of the parts, and encounters peculiar difficulties of one kind and another occasioned by temporary conditions that have nothing to do with the nature of the machine or with its construction elsewhere. The laborer thus obscures his general view of the principle of the machine by covering it up with a great collection of details that do not essentially concern it. He is much more impressed with accidental matters of no account in the theory of the working of the machine, than he is with the principles of its action. In a second experiment at constructing a machine, old difficulties disappear and new ones arise. The intellectual education is of narrow scope and limited in time.

The intellectual factor of manual labor is never very large, even in the first construction of a new type of product. The moral education in manual training in the way of perseverance, patience, and plodding industry, is a far greater educational factor than the intellectual factor.

The education of the muscles of the hand and arm, the training of the eye in accuracy, go for something in the way of education, especially if these, too, are of a general character, and productive of skill in many arts. But it happens in most cases that the training of the muscles for a special operation unfits it more or less for the other special operations. Every trade has its special knack or skill, and not only requires special education to fit the laborer to pursue it, but it reacts on him, and fixes in his bodily organism certain limitations which for greater or less extent unfit him for other occupations. The work of blacksmithing, for instance, would unfit one for engraving; the work in planing and saw-

ing would diminish the skill of the wood-carver. Work in the trades that deal with wood and metals (and these include the entire curriculum of the manual-training school) would be disadvantageous to the delicate touch required by the laborer on textile manufactures; and this class of laborers is nearly as large as the combined classes of wood and metal workers.

Your committee find that the course of study in manual training, in so far as it concerns the education of the hand, is limited to a narrow circle of trades in the wood and metal industries, and that so far as it is auxiliary to trades and occupations directly, it covers the work of only one in twelve of the laborers actually employed in the United States.

Indirectly, as dealing especially with the construction of machinery, it has a much wider application, and your committee believe that all laborers who employ machines or tools of any description would be benefited to a greater or less degree by a course of manual training, and that there is something educative in it for all who are to use machines. This is the most important argument that can be urged by the advocates of the manual-training school in behalf of its educative value.

Your committee would here call attention to other arguments often used which are weak and misleading; such, for example, as the statement that manual training cultivates the powers of attention, perseverance and industry. These are formal powers, and not substantial; that is to say, they derive their value from what they are applied to, and they may be mischievous as well as beneficial. The power of attention may be cultivated by the game of chess, or the game of whist, or of draw poker, or to the picking of pockets; but it is only attention to those subjects and not attention in general that is cultivated. The whist player who has developed careful circumspection, keen attention, the calculation of probabilities in the matter of cards, is quite likely not to manifest them in regard to higher matters of observation of nature or the study of man. All games of boys—for instance, marbles, quoits, baseball, jack-straws—are educative, especially in such matters as are named as results of manual training, namely: (*a*) the development of the physical powers; (*b*) the acquisition of dexterity of hand and accuracy of eye; (*c*) in perseverance; (*d*) in attention. These, moreover, carry with them some general training, and give the boy a similar ability in a field of related subjects. But it would not be fair to expect that these qualities of mind would show themselves in the boy's work in mathematics or history, for his interest in these games might make him dull and inattentive to all school studies. Boys may love the work of the manual-training school and dislike history, grammar and mathematics, and all book-learning, in fact; but to be excellent in manual training would not prevent him from being illiterate and a bad neighbor and a bad citizen—even a dynamiter.

Your committee would further call attention to the fact that what is

educative at one time may be entirely without such an effect at another—or, indeed, it may be deadening to the mind. Thus the advocates of manual training admit that it is useful as education only if not carried to the point of arriving at skill in production. This feature, of course, makes against the economical argument in behalf of such schools. According to the economic view, skill in production is the primary object aimed at by introducing the training of the hand into schools. But M. Sluys, the Belgian normal-school director who reports on the Swedish system, says that when the child is compelled to manufacture large numbers of a given object in order to acquire skill in the work, the educative value of the work diminishes. "From the third or fourth sample his interest wanes; mechanical repetition invariably excites disgust for any work."

Your committee would call attention here to the fact that if an educative opportunity is gained by not requiring mechanical repetition to the point of acquiring skill, there is also an educative opportunity lost; for the patience and perseverance that pursues its work to the end, and bravely keeps down any tendencies to disgust at the lack of novelty, is a moral education indispensable to success in any manual calling. No teaching in the study of the schools as they are would be esteemed of a high order if it did not train its pupils to attack difficult studies like arithmetic and grammar and courageously overcome them. Mere natural disinclination and patience must be conquered before the child can become a rational being.

Your committee would further suggest that no justice as yet has been done by the advocates of manual training to the claims of industrial drawing as a training for the hand and eye and the esthetic sense. If the pupil pursues this study by the analysis of the historical forms of ornament, and acquires familiarity with graceful outlines and a genuine taste for the creation of beautiful and tasteful forms, he has done more towards satisfying the economic problem of industry than he could do by much mechanical skill. The great problem in the industry of nations has come to be the esthetic one—how to give attractive and tasteful forms to productions so as to gain and hold the markets of the world. The object of the study of drawing in our schools is not the acquirement of a "new art of expression," to use the stale definition put forward by some of the advocates of the self-styled "new education," because it is not worth the pains to learn the art of drawing merely to make pictures of what is seen or what is fancied. Rather is drawing the best means of acquiring familiarity with the conventional forms of beauty in ornament—forms that express the outlines of freedom and gracefulness and charm all peoples, even those who have not the skill to produce such forms. Some nations, like the French, for example, have educated their working classes for many generations in this matter of taste, and it has become a second nature. Other nations, the Anglo-Saxon among them, are

not naturally gifted with a taste for the production of the beautiful, but rather with a tendency to look for the dynamic, the lines of force rather than of freedom. They are content to produce what is strong and durable and useful. But this has led them to the discovery that they must also be content with inferior places in international expositions, and with a virtual exclusion from the markets of the world. Only a high tariff can force any considerable consumption of useful articles of clumsy and unsightly shapes.

In view of these facts, your committee have deemed it desirable to mention industrial drawing and the true method of teaching it by the analysis and production of the standard ideals in ornament, as worthy of most careful consideration on the part of all, and especially on the part of all interested in manual-training instruction, either for its economical or its educative advantages.

Respectfully submitted,

GEORGE P. BROWN, S. S. PARR,

J. H. HOOSE, W. T. HARRIS,

Committee on Pedagogics.

BRAINS, SIR.

The truth is, that what men most need for the business and labor of life is, not so much specific knowledge, as mental aptitude and power. "Education," says Mill, "makes a man a more intelligent shoemaker, if that be his occupation, but not by teaching him how to make shoes; it does so by the mental exercise it gives and the habits it impresses." The abiding, practical result of school-training is soul-power. A knowledge of the facts and principles relating to a given pursuit is very important, but higher than this is that developed strength and ability, that power of discernment and application, which can change the dead facts of knowledge into the living realities of human action and endeavor. Knowledge may guide and enlighten, but discipline gives acumen, strength, self-poise, grasp, inspiration; and these are the lucky winners of success in all the conflicts and emergencies of life. The superficial empiricist, with a stock of scientific facts in his head, but with no clear insight into their causes and relations, is liable to blunder in every new application of his knowledge. Practical facts, to be of practical utility for the purpose of guidance, must be applied by an intelligent mind. "With brains, sir," was Mr. Opie's reply to the student who wished to know with what he mixed his paints, and this answer contains the true practical philosophy of both art and business. The prime want in getting a living, which Mr. Froude makes the chief end of life, is "brains, sir"—a mind keen-sighted and far-sighted, steady in its aim and purpose, and full of faith. Thought is the highest practical result of intellectual training. This is the alchemy that changes plodding toil to

many-handed industry, and makes the brain of labor stronger than its muscles. It was Prussian brains that won on the fields of Sadowa and Sedan.

E. E. WHITE.

RULES.

While there is no doubt that there are very many rules pertaining to the management of schools in the large cities of the country that have no practical force, still a proper consideration for the education of the children requires that every rule be strictly enforced. The ease with which the rules and orders of a Board of Education are set aside, even by members of the Board themselves, is a constant menace to the proper training of young people for citizenship. I am frequently asked by law-abiding, sensible people, to set aside a State law which requires that children shall be vaccinated, and which no power except the Legislature itself can legally interfere with.

The most important rule for any Board of Education to follow is that they will not individually or collectively disregard their own rules.

TRUANCY.

Schools should co-operate with home government, but to require them to look after truants is shifting a responsibility that belongs to the home. The parents send their children to school, and if they do not go, the case is one for the parents and not for the schools. A child who plays truant has been sent to school by his parents, and the offense is one against home, and not school government. I hope to live to see the time when the home shall reach down to the school; instead of as now, when we try to have the school reach out to the home.

I am glad to be able to note that suspension for truancy is no longer considered a remedy. Our teachers are coming to understand that with liberty, pure air and the genial sunshine on the outside, there must be sympathy, interest and untold wisdom and tact in a schoolroom to hold the naturally careless and wayward.

THE SYSTEM OF GRADING PUPILS IN ST. LOUIS.

The editorial comments in the May number of the Review on the plans for school organization that would make possible the advancement of individual pupils whose strength is markedly beyond that of

the classes in which they are, show that the system of grading which has been in use in St. Louis for many years is not widely known or understood.

A brief presentation of the plan will, I am sure, recommend it as a complete solution of this problem, one that commands the most serious attention of all who appreciate the evil done an active mind by inaction.

Our primary and grammar school work is divided into eight grades, and each grade is subdivided into four quarters. The amount of work assigned to the grades and quarters is the work possible to be accomplished by the average class in these periods, and has been determined by experience.

The work in any quarter of any grade may be begun at any period of the school year, and is given only such time as the particular class requires to finish it; this may be considerably more than a quarter of the year, or it may be considerably less. Whenever it is done, the class goes on at once to the next work. The progress is not hindered by any artificial division of the work or time.

How the organization of a large school is adapted to this division of the work can be most clearly shown by a table giving rooms and classes with their respective positions in grades and quarters of the work.

It is our custom to send a class to the High School at the end of each half year.

The table given below will represent the organization of one of our schools just after the January class has been sent to the High School and the other classes moved up to the new rooms.

In the table the numbers indicate the rooms and grades, and the exponents the class and quarter. The sign + (plus) after the exponent means that at the beginning of this quarter of the year the class has already done considerable work of this quarter of the work; the sign —, that the class is not yet ready to begin the new quarter's work. The school year consists of forty weeks, and the quarter of ten weeks.

TABLE.

| Room and class | Grade and quarter.. | Room and class | Grade and quarter.. | Room and class | Grade and quarter.. | Room and class . | Grade and quarter.. | Room and class | Grade and quarter.. |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|---------------------|------------------------|------------------------|------------------------|
| 1 and 2 | 3 | 1 | 2+ | 1 | 4 | 1 | 4+ | 1 | 4 |
| 1 | 8 | 7 | 6 | 1 | 4 | 15 | 3 | 19 | 2 |
| 1 and 2 | 3 | 2 | 2 | 2 | 3+ | 2 | 4+ | 2 | 3 |
| 2 | 8 | 7 | 6 | 11 | 4 | 15 | 3 | 19 | 2 |
| 1 and 2 | 1 | 1 | 2 | 1 | 3 | 1 | 4 | 1 | 2 |
| 3 | 8 | 8 | 6 | 12 | 4 | 16 | 3 | 20 | 2 |
| 1 and 2 | 3 | 2 | 2 | 2 | 3- | 2 | 3 | 2 | 2- |
| 4 | 7 | 8 | 6 | 12 | 4 | 16 | 3 | 20 | 2 |
| 1 | 3- | 1 | 4+ | 1 | 2 | 1 | 2+ | 1 | 2- |
| 5 | 7 | 9 | 5 | 13 | 4 | 17 | 3 | 21 | 2 |
| 2 | 3- | 2 | 3+ | 2 | 1+ | 2 | 2 | 2 | 2- |
| 5 | 7 | 9 | 5 | 13 | 4 | 17 | 3 | 21 | 2 |
| 1 | 1 | 1 | 2 | 1 | 1+ | 1 | 2- | 1 | 4++ |
| 6 | 7 | 10 | 5 | 14 | 4 | 18 | 3 | 22 | 1 |
| 2 | 4 | 2 | 1 | 2 | 4+ | 2 | 1 | 2 | |
| 6 | 6 | 10 | 5 | 14 | 3 | 18 | 3 | 22 | 1 |
| | | | | | | | | 1 | 2 |
| | | | | | | | | 23 | 1 |
| | | | | | | | | 2 | 1 |
| | | | | | | | | 23 | 1 |

The above table shows that some of the classes are less than five weeks apart in the work, and none more than ten weeks apart, with the exception of those in the highest grades. Rooms one and two are both in the third quarter of the eighth grade, and will both go to the High School in June.

Room 3, the next lower, is in the first quarter of the eighth grade, a difference of two quarters.

This classification in these rooms is necessary, as we promote to the High School only twice a year. It will be noticed that each room is divided into two sections or classes, and that in some instances several classes are on the same work.

So close is the grading under this plan that any pupil whose ability is clearly beyond that of his classmates has no difficulty in making up the intervening work and passing to the next higher class at any time.

We have class promotions to a new quarter's work whenever the previous work is finished; we have individual promotions whenever the individual is worthy, should it be half a dozen times a year.

Our division of the work is not determined by any set times of the year or rooms of a building; but by the needs and capacity of those doing the work. As well as giving to the brighter pupils opportunity for advancing, this grading permits those who, through unavoidable absence or other cause, have fallen behind, to drop into the next lower class without loss. With teachers and Principals who are alert and able to detect individual merit, this plan meets all the needs in dealing with its advancement.

It is one of our richest legacies from Dr. Harris, to whom we owe so much.—[Ben Blewett, in Educational Review.

Stoddard School, St. Louis, Mo.

MUSIC IN SCHOOLS.

We teach arithmetic for business, geography for commerce, reading for information, language for culture, physiology for health, drawing for industrial art, singing for character and enjoyment. We teach arithmetic and geography for the counting-room, reading and language for society, drawing for the shop, physiology and singing for the home. We study geography and reading that we may know more, arithmetic and drawing that we may do more, language that we may talk and write, physiology and singing that we may be better.

Character is as vital to a man's success and happiness as intellectual ability. It is as important that a man choose right and feel right as that he know the right. Every subject has its bearing upon a man's entire life; but every subject is focused to accomplish a special thing.

That which singing may accomplish for man is in every way as important to the man and to the world as that which is to be accomplished by arithmetic, geography, language or drawing. It is not, however, as important as reading, which really counts for as much as all the other branches.

Singing is closely related to health, to choices, to intellectual activity; consequently, it is vital to the character. A man's success in industrial, commercial or professional life depends largely upon his courage, peace of mind, freshness, hopefulness and elasticity. Singing is helpful in all these directions. To make a man is more important than to make a mechanic; to make a good man is more important than to make a great man; to make a joyful man is more important than to make a brilliant man.

Singing should be so taught in the public schools as to accomplish something beyond the singing. A child gets a good deal out of arith-

metic aside from the ability to extract cube root; he gets more out of geography than the location of gulfs, bays and capes; more out of history than a string of dates; more out of language than an acquaintance with the subjunctive mood. We must get more out of singing than a knowledge of the scale, or ability to sing a song.

Music teaching in the public schools must do for the child in thought, sympathy and choice all that it is capable of accomplishing. There has been much teaching of drawing that is the rankest folly, some teaching of language that is silly; and there has been much teaching of singing that amounted to little aside from ability to use the voice skillfully.

Unless history and biography have been sadly abused, there is ability in music that does not mean high morality or great intellectuality; but, rightly used, there is more discipline for mind and heart, more discipline for success and enjoyment, more discipline for character in learning to sing than in learning almost any other branch. Thinking and singing ought to be companions.

Germany is the only modern nation that has given the world an abundance of vigorous psychology. Modern thought would be robbed of its power were we to erase the names of Liebnitz, Fichte, Kant and Hegel. At the same time, and through the same general period of her history, Germany gave the world the intensity of musical grandeur. Handel, Haydn, Mozart, Mendelssohn and Beethoven hold the same rank in the world as do Liebnitz, Fichte, Kant and Hegel, and they represent the same age; and, though it is one of the untraceable things, I have no question but that there is a vital connection between the philosophical and the musical supremacy in Germany.

In the same way it may be said that the great advance in psychological study among teachers, the enthusiasm for intellectual activity in the school room date from the time that singing in the public schools was so enthusiastically introduced.

Singing should be taught almost wholly for its effects, aside from ability to sing. Of course, no teaching can be effective that does not produce good singing, but very good singing may be produced with few of the other effects.

One may sing well and not have the health perceptibly the gainer by it, without aiding the voice in reading or conversation, without making the disposition sweeter, courage greater, character more reliable, or thinking clearer; but singing cannot be well taught that does not, while making intelligent singers, benefit the whole physical being, through attitude, breathing and vocal elasticity; that does not make the thought more keen; that does not give greater power of abstract conception; that does not make the choices more correct, the moral perceptions more accurate, the disposition more uniform, the intellectual, moral, physical life more fervent.

What the public school wants of singing as a branch of instruction is the grandest possible teaching of the art intellectually and fervently, as a means of providing the most manhood and womanhood. Singing is to be taught the whole child. His entire being, mentally, physically, industrially, morally, is to be vibrant with health, elasticity, energy and cheerfulness.

These things being so, singing, when well taught, is as important a subject for the schoolroom as any other branch; and, unlike most other branches, it needs to be taught from the lowest primary grade to the highest, in the ungraded as in the graded school. It is needed for patriotism, for morality, for health. It is needed to make discipline lighter, school attendance more regular, school management easier, study more interesting, recitation more spirited.

What the wings are to the bird, what the blossom is to the plant, what the juice is to the fruit, what the eye is to the face, what fervency is to the voice, singing is to the school.

By ALBERT E. WINSHIP,
Editor of the Boston *Journal of Education*.

SCHOOL GOVERNMENT.

The old idea that "lickin' and larnin'" go hand in hand, no longer rules in a well-regulated school. There is no more infallible rule that applies to the education of children than that good teaching carries with it good control. A teacher who depends upon her Principal to hold her class in check through fear of the "office" should revise her methods and develop power in teaching, and ability to control will come with it.

CORPORAL PUNISHMENT.

Though corporal punishment is not forbidden in our schools, the number of cases is steadily growing less, and, in my opinion, better control is taking its place. The schools in which there is no corporal punishment do not suffer in comparison with those in which resort is had to the rod.

In some districts corporal punishment is forbidden and in others it is permitted. I have no hesitation in saying that the discipline is much better when the rod is not used. In the districts where it is permitted the poor teachers do all the whipping. The rod in the schoolroom is a remnant of the middle ages and should have no place in the schools of to-day.

SUPT. PITTSBURG, PA.

In reply to your question about good teaching and discipline I would say that in my opinion, in the best schools, the keeping of order does not require attention. If the right spirit is in the teacher, and by her infused into the school, cases of disorder will be very rare indeed. Rules relating to punishment and suspension must be made for the benefit of the weak teachers.

SUPT. ST. PAUL, MINN.

I find that in a general way the teachers who interest their pupils and do good teaching have the least occasion for corporal or any other kind of punishment.

SUPT. SPRINGFIELD, MASS.

A well-governed school, in my estimation, is so well poised that, in the absence of the teacher, it will run on itself till the nightfall, without noise or friction. Is this too much to expect? Fellow-teachers, we can take iron and brass and make a watch that will keep time when its owner is fast asleep; that will run on correctly for a year. He is a poor watchmaker who cannot make one that will run twenty-four hours. Can we do more with dead, dumb metal than we can with living, loving, throbbing human hearts? Can we accomplish more accurate, definite, reliable results with our skilled hands than our trained minds? Shall a teacher of immortal souls yield to a maker of machinery? Nay, verily.

J. DORMAN STEELE.

The teacher is to develop individuality, not to absorb it. She should teach pupils to do, not what she wills, because she wills it, but what is right, because it is right. The moment Miss Duzenberry leaves her room, the pupils are in an uproar, showing by their extravagant misbehavior how great was the will pressure upon them, and how lamentable a reaction is sure to follow when the pressure is removed. Besides, think what a strain it puts upon those little minds and bodies.

C. W. BARDEEN.

PRIZES.

Something should be done to get rid of prizes and medals of every sort. Those who lead their classes do so, as a rule, with little effort, while the *workers* struggle along at the foot of a class and barely reach promotion. The ten best in a class deserve no more than the ten poorest, and in the race of life they often get less.

BOYS THAT ARE WANTED.

While acting as Deputy Superintendent, it occurred to me to find out what kind of boy the best business houses select when

seeking one for employment. My inquiry received the most cordial answers. They are full of inspiration for pupils, and wise suggestions for parents and teachers.

I quote those of three leading business houses:

M. BABCOCK, ESQ., *Deputy Superintendent of Public Schools, New City Hall, City:*

DEAR SIR: Yours of the 25th inst., making inquiry as to the kind of boy we select when seeking one for employment in our business, is at hand. Perhaps we can best answer your question by telling the kind of boy we do *not* seek, and will not employ.

First and foremost, we do not want an untruthful, deceitful or dishonest boy. We cannot tolerate one who is cross, irritable or unaccommodating. We do not want a boy who is untidy and unsystematic; nor, on the other hand, one who devotes more time and attention to his personal appearance than he does to his work.

We have no use for a dissipated boy, a drinker or a cigarette fiend. Cigarette smoking we consider a most reprehensible habit, and one that is doing a vast amount of injury to the young people of our land. We do not want a boy who will loiter on the street corners and play marbles and chat with his chums. We do not want a boy who writes a scrawling and illegible hand. We do not want a tattler, one who makes trouble among his associates, nor a jealous, envious or selfish boy. We do not want a boy who is disrespectful, impertinent, or unkind to his parents; one who calls his father "The Old Man," or his mother "The Old Woman."

Now, the kind of boys we seek to employ are those who are absolutely *truthful*; this carries with it *integrity*, for a boy who will not lie will not steal; we therefore consider a truthful boy an honest one. Of course we want, as every employer does—a polite, "level-headed" and willing boy. In addition to these essentials, he should be quick at figures and write a good, legible hand. Shorthand (stenography) can be easily acquired, and is of great value to a busy man. It is almost a necessity.

A boy free from the bad habits above enumerated, and faithful to his trusts, be they ever so small, will in all probability develop into a successful and honest business man.

It has been well said, that he who is faithful in a few things shall be made ruler over many.

Yours truly,

MR. M. BABCOCK, *Deputy Superintendent of Schools—*

DEAR SIR: In reply to your inquiry as to the kind of boys we employ please be advised that we look upon cleanliness and neatness in personal appearance as the prime qualification; then they must be

civil, obedient, move quickly and noiselessly, and when told to do anything do it correctly and at once.

We find that these qualifications in a boy are always backed by intelligence sufficient to carry him along. Very respectfully,

MR. M. BABCOCK—SIR: In reply to your letter asking for our idea of the boy we would wish for when employing one, permit us to say he must have a neat personal appearance, be well recommended, and for qualifications be smart, attentive, truthful, and have a good disposition, ready to take instructions and profit by them.

Amongst our most successful salesmen are some who have graduated from the ranks of the cashboys in our employ. Yours truly,

CULTIVATED MANNERS.

Manners are the happy way of doing things; each one a stroke of genius or of love, now repeated and hardened into usage, they form at last a rich varnish, with which the routine of life is washed, and its details adorned. If they are superficial, so are the dewdrops which give such a depth to the morning meadows. Manners are very communicable; men catch them from each other. Consuelo, in the romance, boasts of the lessons she had given the nobles in manners on the stage and in real life. Talma taught Napoleon the art of behavior. Genius invents fine manners, which the baron and the baroness copy very fast, and, by the advantage of a palace, better the instruction. They stereotype the lesson they have learned into a mode. The power of manner is incessant—an element as unconcealable as fire. The nobility cannot in any country be disguised, and no more in a republic or a democracy than in a kingdom. No man can resist their influence. There are certain manners which are learned in good society of that force that, if a person have them, he or she must be considered and is everywhere welcome, though without beauty, or wealth, or genius. Give a boy address and accomplishments, and you give him the mastery of palaces and fortunes where he goes; he has not the trouble of earning or owning them; they solicit him to enter and possess.

RALPH WALDO EMERSON.

FREE KINDERGARTENS.

There is nothing too good to be said of the work done by the free kindergartens. They are one of the great forces at work in our midst that few people ever stop to think about. Their

influence upon the present and future intellectual, moral and social conditions of San Francisco cannot be measured.

CHILDREN'S HEALTH.

"Only favorable reports have come to me concerning the operation of the plan by which the Board of Health has been carrying on a system of daily visits in all the schools by competent and disinterested medical men. The Board of Health appears to have been highly fortunate in the character of the professional men it has secured for the work. Some of the best medical talent in the city has been engaged in this service. The medical visitors do not undertake to give professional treatment in any case. They examine all children thought by their teachers to be ailing, and point out the need of professional treatment in all cases in which the need exists. The treatment itself must be received from the family physician or in the hospitals or in the dispensaries.

"Some idea of the extent and importance of the work may be gathered from the following statistics which have been kindly furnished me by Dr. Samuel H. Durgin, chairman of the Boston Board of Health:

The total number of children examined during the four months ending February 28, 1895, was 9,063, of whom 5,825 were found to be sick, and 3,238 were found not to be sick. The number found sick enough to be sent home was 1,033; of these 280 were suffering from contagious diseases, as follows: Diphtheria, 58; scarlet fever, 19; measles, 42; whooping cough, 17; mumps, 35; pediculosis, 47; scabies, 33; congenital syphilis, 7; chickenpox, 22. These children were in their seats spreading contagious diseases amongst other children. The number of children who were saved from these diseases by the timely discovery and isolation of the sick children is, of course, beyond computation.

The other diseases discovered and for which the necessity for treatment was pointed out, were as follows: Abscess, 22; catarrh, 244; cellulitis, 12; chorea, 11; colds, with more or less bronchitis, 224; debility, 63; diseases of the eye, 389; diseases of the ear, 35; diseases of the skin and scalp, 186; diseases of the throat and mouth, 3,489; epilepsy, 5; fracture of collar bone, 1; headache, 171; indigestion, 42; malaria, 17; nausea, 50; Pott's disease, 3; swollen glands, 133; ulcers, 16; wounds, 21; miscellaneous diseases, 411; examined for vaccination, 177.

The summary statement is as follows :

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|----------------------------|-------------|
| Total number examined..... | 9,063 |
| Found to be sick..... | 5,825 |
| Found not to be sick..... | 3,238 |
| | <hr/> 9,063 |

I believe that the importance of this work of medical visitation thus successfully begun can hardly be overestimated. So far as I know, Boston is the only city in this country where work of this kind has been undertaken. It is to be hoped that the efforts of the Board of Health may be heartily sustained by the School Board and by the general public.—[Superintendent Seaver, in Boston School Report.

The Health Board of the city of New York, says the *Teachers' World*, recently made a number of suggestions to the School Board of that city. Among the suggestions were the following: That the use of slates, slate pencils and sponges be discontinued in all the public schools; that pupils be supplied with pencils and pen-holders, and that these shall not be transferred from one pupil to another without suitable disinfection; that all school property left in the school building by a child sick with any contagious disease, and all such property found in an apartment occupied by a family in which a case of contagious disease has occurred, shall be taken by the Health Department for disinfection or destruction; that books taken home by children shall be covered regularly once each month with brown manilla paper; that places for drinking water on the ground floors of the school buildings shall be discontinued and a covered pitcher provided for each classroom, in which fresh water shall be placed before every session; a numbered cup, to be kept in the classroom, shall be issued to each pupil, and no interchange of cups be allowed. These recommendations are eminently practical and should be made a part of the regulations of every school board in the land.

AS DEPUTY SUPERINTENDENT.

While I was Deputy Superintendent I was frequently criticised because I seemed to court the good-will and confidence of the teachers. It was my duty to visit classes and note the character of the instruction, and if need be suggest improvement. The efficiency of such work depends not only upon an intelligent under-

standing of what class-work should be, but upon ability to suggest remedies where needed. Any one who imagines he can do this without the respect of the teaching corps, should try it. If he does not bump up against some stalwart experience, it will be because he doesn't do his duty. I have in mind some officials who have tried to "reform" the San Francisco schools by cracking their whips over the backs of the teachers. They had—well, they had the experience.

If, as I believe, I have done some good for the schools, it is because, without fear or favor, I have tried to devote myself to them, not forgetting that improvements, if any, are of slow growth and must come, if at all, through the intelligence and good-will of the class teachers and Principals.

COPIES OF LETTERS TO TEACHERS.

DEAR FRIEND: It occurs to me that I ought to say to you that in my opinion you should, if possible, acquire the habit of doing more careful, deliberate thinking about your work. You will, perhaps, wonder how I arrive at this conclusion, since no one can tell what is in the mind of another. I judge from what I see of the results of your work. Your class do not show careful, thoughtful training. They are listless, careless, restless. Now, may I say I think it will help you if you will keep your blackboards in condition to use them for very many exercises. How to do this must be left to your own ingenuity. My impression is that you sit too much. You are inclined to be noisy yourself. Do you not talk too much? You should not proceed with any recitation while there is disorder in your class. You should hear your class in two divisions, one reciting while the other studies, except in penmanship and drawing. You should make a study of your grade work and of the grades below and above you. You should have every day's lessons outlined so as to have no uncertainty respecting what to do. You should have a good-sized blank book, in which to have an abstract of every lesson outlined in advance. The motive of every lesson should be as thoroughly outlined as the lesson itself. If you or any teacher does not know what the relation of a lesson is to the pupils' development, the work of necessity is not finished and complete. As I sit here, your class as it appeared the last time I was there, is as vividly in my mind as when I sat in your room.

It will require adroit, skillful work on your part to interest them and bring them up. It can't be done by worry. It can't be done by haphazard work. You should be perfectly rested, and in the most quiet and deliberate way see the needs of the class as a whole and as indi-

viduals. The children in any class must be interested in their work, and it requires skill and thought to do it. Children do not attend because we tell them to. They attend because they are interested.

This letter is written because I wish to help you, and not to find fault. There is but one wish in my mind, and that is that I may in some way help you to make a start in the direction of more thorough work. I do not mean to disturb your peace of mind, but to help you to a plan in your work where it will be easier and better. It will be easier because better. I believe you have the intelligence to take hold, analyze your work and see what it needs and do it. I hope you understand my motive and that there is nothing but the best of feeling in my heart for you.

Sincerely yours,

M. BABCOCK.

DEAR FRIEND: I was very glad to see a marked improvement in your room since about one year ago. I hope you are making a study of the essence of first-year work. As I sat in your room during my last visit I wondered if you saw what was to me very plain: At no time, it seemed to me, did you have the interested attention of even a half of the division you were hearing recite, and, as it seemed, a division not under your immediate attention were doing little or nothing. I saw one boy who did nothing but play with his cap for thirty minutes. Now, this is all said because I feel that I owe it to you to say it. No one can correct an error till she knows that it exists, and not then till she thoroughly realizes what it is and can see, from her own standpoint, the remedy. It occurs to me that you do not see your class as a whole nor as individuals. If you do see and understand the conditions, you have not yet found the remedy. The keynote to improvement is thinking out a remedy for what one knows exists. It is suicidal to find excuses for what one realizes as wrong.

If you do not know it you should know that the pupils you send forward are not really as well prepared as those that are sent from the other class. A practical eye can see at a glance the contrast between your class and the one of similar grade, and it is not in favor of your class.

Now, may I say that to my mind the first thing for you to do is to realize and admit to yourself fully that your work is not good, and then set about finding a remedy. You have mental power enough to think this problem out for yourself.

I talked with your Principal, and you ought to. She will help you if you will give her a chance. I hope you will go to her, if you like, with this letter, and talk over your work.

You should talk to the children in a natural tone of voice. Your

tone is too loud and it is unnatural. The reading in your class and the other first year class is fully a year apart.

There is but one reason for this letter. I feel it my duty to tell you plainly, and I hope I have done it in a kind way. It is certainly not fair to you to let you drift along without knowing that your work should be improved.

Very sincerely yours,

M. BABCOCK.

DEAR FRIEND: For some reason there seems to be a falling off in your class work. It is not very marked, but enough so to make quite a contrast with the impression I have formerly had of your work. If this surmise is based on fact you know it, and you also know what to do to correct it. I do not mean this as fault-finding, but as a word from a friend who believes it to be his duty to give his impressions if there even seems to be a lack in class work.

Do you see to it that your class have fresh air to breathe?

Do you divide your class into divisions for purposes of reciting and study in all subjects except writing and drawing?

Do you come to your class thoroughly prepared for the day's work?

Do you use your blackboard daily for class work? I mean, Do the pupils use it?

Do you change the contents of the part of the board you use at least once a week?

Isn't too large a proportion of the pupils' time taken up in seat-work, writing?

Do you put your best ability into your daily work?

How do your pupils compare with those in the same grade in the other class?

Do you confer with your neighbor who is teaching the same grade?

How does your Principal regard your work?

How do *you* regard it?

If your salary depended upon finished work would you be content with your present standard?

These questions are not for answer, but to think about. You have superior ability, and I am sure you can, at least in some respects, suit yourself better.

If you will receive this in the spirit in which it is written it can do no harm.

Perhaps it would be well to talk it over with your Principal. She can help you if you will give her an opportunity.

Very respectfully yours,

M. BABCOCK.

SELECTION OF TEACHERS.

There has been so much discussion of late respecting the best means of selecting teachers, the method followed in other cities should possess some interest:

ST. PAUL, Minn.—Our teachers, as you will see by the rules, are appointed by the proper committees and confirmed by the Board. These committees appoint upon the recommendation of the Superintendent of Schools. Practically, I appoint all teachers, though not nominally.

PEORIA, Ills.—Our teachers are selected from recommendations made by the Superintendent. The selections are made by a committee and reported to the Board of Education for confirmation. Once elected, she is removed only for cause.

INDIANAPOLIS, Ind.—Teachers are selected by myself and confirmed in their appointment by the Board.

CLEVELAND, Ohio.—The Superintendent of Instruction has the sole power to appoint and discharge all assistants and teachers authorized by the Council to be employed.

LOS ANGELES.—All applicants must appear before the Teachers' Committee, after which they recommend to the Board and the Board elects.

OMAHA, Neb.—Our teachers are elected by the Board of Education in general meetings, upon the recommendation of the Committee on Teachers, whose report is made after consultation with the Superintendent.

CINCINNATI, Ohio.—Our teachers are appointed by the Superintendent, or rather nominated to the Board of Education by him, and the salaries fixed and confirmation made by the Board.

SEATTLE, Wash.—We select our teachers entirely from the list of applicants regularly on file, of which we have a great number. We are governed in our selections by the experience and testimonials of the applicants and replies received from confidential letters of inquiry sent to parties who can speak from positive knowledge.

We select them at a regular meeting of the Board of Education, all the members voting, but the writer usually engages them, assigns them to their positions, and hence the legal election is a ratification of the Superintendent's action.

CITY SUPERINTENDENT OF SCHOOLS.

CHICAGO, Ills.—I assign all teachers.

SUPERINTENDENT.

TOPEKA, Kansas.—Our teachers are selected by the committee, on recommendation by the Superintendent.

DES MOINES, Iowa.—The Superintendent and Principal of the building in which the vacancy occurs usually recommend a desirable person, and as a rule the Board elects the one thus recommended.

KANSAS CITY, Mo.—I go over the entire list of applicants and select the names of those thought to be the best, and submit these names, classified, to the Board. I make four or five classes. In this way we get the best, or try to do so. For outside information we depend upon various sources for fitness.

REPORT OF THE COMMITTEE OF FIFTEEN.

The report of the Committee of Fifteen made at the Cleveland meeting of the Department of Superintendence is of such vital importance that I quote in full that portion that relates directly to courses of study in primary and grammar schools:

CORRELATION OF STUDIES IN ELEMENTARY SCHOOLS.

BY W. T. HARRIS, LL. D.

The undersigned committee agrees upon the following report, each member reserving for himself the expression of his individual divergence from the opinion of the majority, by a statement appended to his signature, enumerating the points to which exception is taken and the grounds for them.

I. CORRELATION OF STUDIES.

Your committee understands by correlation of studies:

1. Logical order of topics and branches.

First, the arrangement of topics in proper sequence in the course of study, in such a manner that each branch develops in an order suited to the natural and easy progress of the child, and so that each step is taken at the proper time to help his advance to the next step in the same branch or to the next steps in other related branches of the course of study.

2. Symmetrical whole of studies in the world of human learning.

Second, the adjustment of the branches of study in such a manner that the whole course at any given time represents all the great divisions of human learning, as far as is possible at the stage of maturity at which the pupil has arrived, and that each allied group of studies is represented by some one of its branches best adapted for the epoch in question; it being implied that there is an equivalence of studies to a greater or less degree within each group, and that each branch of human learning

should be represented by some equivalent study; so that, while no great division is left unrepresented, no group shall have superfluous representatives, and thereby debar other groups from a proper representation.

3. Psychological symmetry—the whole mind.

Third, the selection and arrangement of the branches and topics within each branch, considered psychologically, with a view to afford the best exercise of the faculties of the mind, and to secure the unfolding of those faculties in their natural order, so that no one faculty is so overcultivated or so neglected as to produce abnormal or one-sided mental development.

4. Correlation of pupil's course of study with the world in which he lives—his spiritual and natural environment.

Fourth and chiefly, your committee understands by correlation of studies the selection and arrangement in orderly sequence of such objects of study as shall give the child an insight into the world that he lives in, and a command over its resources such as is obtained by a helpful co-operation with one's fellows. In a word, the chief consideration to which all others are to be subordinated, in the opinion of your committee, is this requirement of the civilization into which the child is born, as determining not only what he shall study in school, but what habits and customs he shall be taught in the family before the school age arrives; as well as that he shall acquire a skilled acquaintance with some one of a definite series of trades, professions or vocations in the years that follow school; and, furthermore, that this question of the relation of the pupil to his civilization determines what political duties he shall assume and what religious faith and spiritual aspirations shall be adopted for the conduct of his life.

To make more clear their reasons for the preference here expressed for the objective and practical basis of selection of topics for the course of study rather than the subjective basis so long favored by educational writers, your committee would describe the psychological basis, already mentioned, as being merely formal in its character, relating only to the exercise of the so-called mental faculties.

It would furnish a training of spiritual powers analagous to the gymnastic training of the muscles of the body. Gymnastics may develop strength and agility without leading to any skill in trades of useful employment. So an abstract psychological training may develop the will, the intellect, the imagination or the memory, but without leading to an exercise of acquired power in the interests of civilization. The game of chess would furnish a good course of study for the discipline of the powers of attention and calculation of abstract combinations, but it would give its possessor little or no knowledge of man or nature. The

psychological ideal which has prevailed to a large extent in education has, in the old phrenology, and in the recent studies in physiological psychology, sometimes given place to a biological ideal. Instead of the view of mind as made up of faculties like will, intellect, imagination and emotion, conceived to be all necessary to the soul, if developed in harmony with one another, the concept of nerves or brain-tracts is used as the ultimate regulative principle to determine the selection and arrangement of studies. Each part of the brain is supposed to have its claim on the attention of the educator, and that study is thought to be the most valuable which employs normally the larger number of brain-tracts. This view reaches an extreme in the direction of formal, as opposed to objective or practical grounds for selecting a course of study. While the old psychology with its mental faculties concentrated its attention on the mental processes and neglected the world of existing objects and relations upon which those processes were directed, physiological psychology tends to confine its attention to the physical part of the process, the organic changes in the brain cells and their functions.

Your committee is of the opinion that psychology of both kinds, physiological and introspective, can hold only a subordinate place in the settlement of questions relating to the correlation of studies. The branches to be studied, and the extent to which they are studied, will be determined mainly by the demands of one's civilization. These will prescribe what is most useful to make the individual acquainted with physical nature and with human nature so as to fit him as an individual to perform his duties in the several institutions—family, civil society, the State, and the Church. But next after this, psychology will furnish important considerations that will largely determine the methods of instruction, the order of taking up the several topics so as to adapt the school work to the growth of the pupil's capacity, and the amount of work so as not to overtax his powers by too much, or arrest the development of strength by too little. A vast number of subordinate details belonging to the pathology of education, such as the hygienic features of school architecture and furniture, programmes, the length of study hours and of class exercises, recreation, and bodily reactions against mental effort, will be finally settled by scientific experiment in the department of physiological psychology.

Inasmuch as your committee is limited to the consideration of the correlation of studies in the elementary school, it has considered the question of the course of study in general only in so far as this has been found necessary in discussing the grounds for the selection of studies for the period of school education occupying the eight years from six to fourteen years, or the school period between the kindergarten on the one hand and the secondary school on the other. It has not been possible to avoid some inquiry into the true distinction between secondary and elementary studies, since one of the most im-

portant questions forced upon the attention of your committee is that of the abridgment of the elementary course of study from eight or more years to seven or even six years, and the corresponding increase of the time devoted to studies usually assigned to the high school and supposed to belong to the secondary course of study for some intrinsic reason.

II. THE COURSE OF STUDY—EDUCATIONAL VALUES.

Your committee would report that it has discussed in detail the several branches of study that have found a place in the curriculum of the elementary school, with a view to discover their educational value for developing and training the faculties of the mind, and more especially for correlating the pupil with his spiritual and natural environment in the world in which he lives.

A. Language studies.

There is first to be noted the prominent place of language study that takes the form of reading, penmanship, and grammar in the first eight years' work of the school. It is claimed for the partiality shown to these studies that it is justified by the fact that language is the instrument that makes possible human social organization. It enables each person to communicate his individual experience to his fellows and thus permits each to profit by the experience of all. The written and printed forms of speech preserve human knowledge and make progress in civilization possible. The conclusion is reached that learning to read and write should be the leading study of the pupil in his first four years of school. Reading and writing are not so much ends in themselves as means for the acquirement of all other human learning. This consideration alone would be sufficient to justify their actual place in the work of the elementary school. But these branches require of the learner a difficult process of analysis. The pupil must identify the separate words in the sentence he uses, and in the next place must recognize the separate sounds in each word. It requires a considerable effort for the child or the savage to analyze his sentence into its constituent words, and a still greater effort to discriminate its elementary sounds. Reading, writing and spelling in their most elementary form, therefore, constitute a severe training in mental analysis for the child of six to ten years of age. We are told that it is far more disciplinary to the mind than any species of observation of differences among material things, because of the fact that the word has a twofold character—addressed to external sense as spoken sound to the ear, or as written and printed words to the eye—but containing a meaning or sense addressed to the understanding and only to be seized by introspection. The pupil must call up the corresponding idea by thought,

memory, and imagination, or else the word will cease to be a word and remain only a sound or character.

On the other hand, observation of things and movements does not necessarily involve this twofold act of analysis, introspective and objective, but only the latter—the objective analysis. It is granted that we all have frequent occasion to condemn poor methods of instruction as teaching words rather than things. But we admit that we mean empty sounds of character rather than true words. Our suggestions for the correct method of teaching amount in this case simply to laying stress on the meaning of the word, and to setting the teaching process on the road of analysis of content rather than form. In the case of words used to store up external observation the teacher is told to repeat and make alive again the act of observation by which the word obtained its original meaning. In the case of a word expressing a relation between facts or events, the pupil is to be taken step by step through the process of reflection by which the idea was built up. Since the word, spoken and written, is the sole instrument by which reason can fix, preserve and communicate both the data of sense and the relations discovered between them by reflection, no new method in education has been able to supplant in the school the branches, reading and penmanship. But the real improvements in method have led teachers to lay greater and greater stress on the internal factor of the word, on its meaning, and have in manifold ways shown how to repeat the original experiences that gave the meaning to concrete words, and the original comparisons and logical deductions by which the ideas of relations and casual processes arose in the mind and required abstract words to preserve and communicate them.

It has been claimed that it would be better to have first a basis of knowledge of things and secondarily and subsequently a knowledge of words. But it has been replied to this, that the progress of the child in learning to talk indicates his ascent out of mere impressions into the possession of true knowledge. For he names objects only after he has made some synthesis of his impressions and has formed general ideas. He recognizes the same object under different circumstances of time and place, and also recognizes other objects belonging to the same class by and with names. Hence the use of the word indicates a higher degree of self-activity—the stage of mere impressions without words or signs being a comparatively passive state of mind. What we mean by things first and words afterward, is, therefore, not the apprehension of objects by passive impressions so much as the active investigation and experimenting which come after words are used, and the higher forms of analysis are called into being by that invention of reason known as language, which, as before said, is a synthesis of thing and thought, of outward sign and inward signification.

Rational investigation cannot precede the invention of language-

any more than blacksmithing can precede the invention of hammers, anvils and pincers. For language is the necessary tool of thought used in the conduct of the analysis and synthesis of investigation.

Your committee would sum up these considerations by saying that language rightfully forms the center of instruction in the elementary school, but that progress in methods of teaching is to be made, as hitherto, chiefly by laying more stress on the internal side of the word, its meaning; using better graded steps to build up the chain of experience or the train of thought that the word expresses.

The first three years' work of the child is occupied mainly with the mastery of the printed and written forms of the words of his colloquial vocabulary; words that he is already familiar enough with as sounds addressed to the ear. He has to become familiar with the new forms addressed to the eye, and it would be an unwise method to require him to learn many new words at the same time that he is learning to recognize his old words in their new shape. But as soon as he has acquired some facility in reading what is printed in the colloquial style, he may go on to the selections from standard authors. The literary selections should be graded, and are graded in almost all series of readers used in our elementary schools, in such a way as to bring those containing the fewest words outside of the colloquial vocabulary into the lower books of the series, and increasing the difficulties, step by step, as the pupil grows in maturity. The selections are literary works of art possessing the required organic unity and a proper reflection of this unity in the details, as good works of art must do. But they portray situations of the soul, or scenes of life, or elaborated reflections, of which the child can obtain some grasp through his capacity to feel and think, although in scope and compass they far surpass his range. They are adapted, therefore, to lead him out of and beyond himself, as spiritual guides.

Literary style employs, besides words common to the colloquial vocabulary, words used in a semi-technical sense expressive of fine shades of thought and emotion. The literary work of art furnishes a happy expression for some situation of the soul, or some train of reflection hitherto unutterable in an adequate manner. If the pupil learns this literary production, he finds himself powerfully helped to understand both himself and his fellow-men. The most practical knowledge of all, it will be admitted, is a knowledge of human nature—a knowledge that enables one to combine with his fellow-men, and to share with them the physical and spiritual wealth of the race. Of this high character as humanizing or civilizing, are the favorite works of literature found in the school readers, about one hundred and fifty English and American writers being drawn upon for the material. Such are Shakespeare's speeches of Brutus and Mark Antony, Hamlet's and Macbeth's soliloquies, Milton's *L'Allegro* and *Il Penseroso*, Gray's *Elegy*, Tennyson's *Charge of the Light Brigade* and *Ode on the Death of the*

Duke of Wellington, Byron's Waterloo, Irving's Rip Van Winkle, Webster's Reply to Hayne, The Trial of Knapp, and Bunker Hill oration, Scott's Lochinvar, Marmion, and Roderick Dhu, Bryant's Thanatopsis, Longfellow's Psalm of Life, Paul Revere, and the Bridge, O'Hara's Bivouac of the Dead, Campbell's Hohenlinden, Collins' How Sleep the Brave, Wolfe's Burial of Sir John Moore, and other fine prose and poetry from Addison, Emerson, Franklin, The Bible, Hawthorne, Walter Scott, Goldsmith, Wordsworth, Swift, Milton, Cooper, Whittier, Lowell, and the rest. The reading and study of fine selections in prose and verse furnish the chief æsthetic training of the elementary school. But this should be re-enforced by some study of photographic or other reproductions of the world's great masterpieces of architecture, sculpture and painting. The frequent sight of these reproductions is good; the attempt to copy or sketch them with the pencil is better; best of all is an æsthetic lesson on their composition, attempting to describe in words the idea of the whole that gives the work its organic unity, and the devices adopted by the artist to reflect this idea in the details and re-enforce its strength. The æsthetic taste of teacher and pupil can be cultivated by such exercises, and once set on the road of development, this taste may improve through life.

A third phase of language study in the elementary school is formal grammar. The works of literary art in the readers, re-enforced as they ought to be by supplementary reading at home of the whole works from which the selections for the school readers are made, will educate the child in the use of a higher and better English style. Technical grammar never can do this. Only familiarity with fine English works will insure one a good and correct style. But grammar is the science of language, and as the first of the seven liberal arts it has long held sway in school as the disciplinary study *par excellence*. A survey of its educational value, subjective and objective, usually produces the conviction that it is to retain the first place in the future. Its chief objective advantage is that it shows the structure of language, and the logical forms of subject, predicate and modifier, thus revealing the essential nature of thought itself, the most important of all objects, because it is self-object. On the subjective or psychological side, grammar demonstrates its title to the first place by its use as a discipline in subtle analysis, in logical division and classification, in the art of questioning, and in the mental accomplishment of making exact definitions. Nor is this an empty, formal discipline, for its subject-matter, language, is a product of the reason of a people, not as individuals, but as a social whole, and the vocabulary holds in its store of words the generalized experience of that people, including sensuous observation and reflection, feeling and emotion, instinct and volition.

No formal labor on a great objective field is ever lost wholly, since at the very least it has the merit of familiarizing the pupil with the contents

of some one extensive province that borders on his life, and with which he must come into correlation; but it is easy for any special formal discipline, when continued too long, to paralyze or arrest growth at that stage. The overcultivation of the verbal memory tends to arrest the growth of critical attention and reflection. Memory of accessory details too, so much prized in the school, is also cultivated often at the expense of an insight into the organizing principle of the whole and the casual nexus that binds the parts. So, too, the study of quantity, if carried to excess, may warp the mind into a habit of neglecting quality in its observation and reflection. As there is no subsumption in the quantitative judgment, but only dead equality or inequality (A is equal to or greater or less than B), there is a tendency to atrophy in the faculty of concrete syllogistic reasoning on the part of the person devoted exclusively to mathematics. For the normal syllogism uses judgments wherein the subject is subsumed under the predicate (*This is a rose—the individual rose is subsumed under the class rose; Socrates is a man, etc.*). Such reasoning concerns individuals in two aspects—first as concrete wholes, and secondly as members of higher totalities or classes—species and genera. Thus, too, grammar, rich as it is in its contents, is only a formal discipline as respects the scientific, historic or literary contents of language, and is indifferent to them. A training for four or five years in parsing and grammatical analysis practiced on literary works of art (Milton, Shakespeare, Tennyson, Scott) is a training of the pupil into habits of indifference toward and neglect of the genius displayed in the literary work of art, and into habits of impertinent and trifling attention to elements as employed material or texture, and a corresponding neglect of the structural form, which alone is the work of the artist. A parallel to this would be the mason's habit of noticing only the brick and mortar, or the stone and cement, in his inspection of the architecture, say, of Sir Christopher Wren. A child overtrained to analyze and classify shades of color—examples of this one finds occasionally in a primary school whose specialty is "objective teaching"—might in later life visit an art gallery and make an inventory of colors without getting even a glimpse of painting as a work of art. Such overstudy and misuse of grammar as one finds in the elementary school, it is feared, exists to some extent in secondary schools and even in colleges, in the work of mastering the classic authors.

Your committee is unanimous in the conviction that formal grammar should not be allowed to usurp the place of a study of the literary work of art in accordance with literary method. The child can be gradually trained to see the technical "motives" of a poem or prose work of art and to enjoy the esthetic inventions of the artist. The analysis of a work of art should discover the idea that gives it organic unity; the collision and the complication resulting; the solution and *denouement*. Of course these things must be reached in the elementary school without

even a mention of their technical terms. The subject of the piece is brought out; its reflection in the conditions of the time and place to heighten interest by showing its importance; its second and stronger reflection in the several details of its conflict and struggle; its reflection in the *denouement* wherein its struggle ends in victory or defeat and the ethical or rational interests are vindicated—and the results move outward, returning to the environment again in ever-widening circles—something resembling this is to be found in every work of art, and there are salient features which can be briefly but profitably made subject of comment in familiar language with even the youngest pupils. There is an ethical and an esthetical content to each work of art. It is profitable to point out both of these in the interest of the child's growing insight into human nature. The ethical should, however, be kept in subordination to the esthetical, but for the sake of the supreme interests of the ethical itself. Otherwise the study of a work of art degenerates into a goody goody performance, and its effects on the child are to cause a reaction against the moral. The child protects his inner individuality against effacement through external authority by taking an attitude of rebellion against stories with an appended moral. Herein the superiority of the esthetical in literary art is to be seen. For the ethical motive is concealed by the poet, and the hero is painted with all his brittle individualism and self-seeking. His passions and his selfishness, gilded by fine traits of bravery and noble manners, interest the youth, interest us all. The established social and moral order seems to the ambitious hero to be an obstacle to the unfolding of the charms of individuality. The deed of violence gets done, and the Nemesis is aroused. Now his deed comes back on the individual doer, and our sympathy turns against him and we rejoice in his fall. Thus the esthetical unity contains within it the ethical unity. The lesson of the great poet or novelist is taken to heart, whereas the ethical announcement by itself might have failed, especially with the most self-active and aspiring of the pupils. Aristotle pointed out in his *Poetics* this advantage of the esthetic unity, which Plato in his *Republic* seems to have missed. Tragedy purges us of our passions, to use Aristotle's expression, because we identify our own wrong inclinations with those of the hero, and by sympathy we suffer with him and see our intended deed returned upon us with tragic effect, and are thereby cured.

Your committee has dwelt upon the esthetic side of literature in this explicit manner because they believe that the general tendency in elementary schools is to neglect the literary art for the literary formalities which concern the mechanical material rather than the spiritual form. These formal studies should not be discontinued, but subordinated to the higher study of literature.

Your committee reserves the subject of language lessons, composition writing, and what relates to the child's expression of ideas in

writing, for consideration under Part 3 of this Report, treating of programme.

B. Arithmetic.

Side by side with language study is the study of mathematics in the schools, claiming the second place in importance of all studies. It has been pointed out that mathematics concerns the laws of time and space—their structural form, so to speak—and hence that it formulates the logical conditions of all matter, both in rest and in motion. Be this as it may, the high position of mathematics as the science of all quantity is universally acknowledged. The elementary branch of mathematics is arithmetic, and this is studied in the primary and grammar schools from six to eight years, or even longer. The relation of arithmetic to the whole field of mathematics has been stated (by Comte, Howison and others) to be that of the final step in a process of calculation, in which results are stated numerically. There are branches that develop or derive quantitative functions, say geometry for spatial forms, and mechanics for movement and rest and the forces producing them. Other branches transform these quantitative functions into such forms as may be calculated in actual numbers; namely, algebra in its common or lower form, and in its higher form as the differential and integral calculus, and the calculus of variations. Arithmetic evaluates or finds the numerical value for the functions thus deduced and transformed. The educational value of arithmetic is thus indicated both as concerns its psychological side and its objective practical uses correlating man with the world of nature. In this latter respect as furnishing the key to the outer world in so far as the objects of the latter are a matter of direct enumeration—capable of being counted—it is the first great step in the conquest of nature. It is the first tool of thought that man invents in the work of emancipating himself from thralldom to external forces. For by the command of number he learns to divide and conquer. He can proportion one force to another, and concentrate against an obstacle precisely what is needed to overcome it. Number also makes possible all the other sciences of nature which depend on exact measurement and exact record of phenomena as to the following items: Order of succession, date, duration, locality, environment, extent of sphere of influence, number of manifestations, number of cases of intermittence. All these can be defined accurately only by means of number. The educational value of a branch of study that furnishes the indispensable first step toward all science of nature is obvious. But psychologically its importance further appears in this, that it begins with an important step in analysis; namely, the detachment of the idea of quantity from the concrete whole, which includes quality as well as quantity. To count, one drops the qualitative and considers only the quantitative aspect. So long as the individual differences (which are qualitative in so far as they distinguish one object from another) are considered, the

objects cannot be counted together. When counted, the distinctions are dropped out of sight as indifferent. As counting is the fundamental operation of arithmetic, and all other arithmetical operations are simply devices for speed by using remembered countings instead of going through the detailed work again each time, the hint is furnished the teacher for the first lessons in arithmetic. This hint has been generally followed out and the child set at work at first upon the counting of objects so much alike that the qualitative difference is not suggested to him. He constructs gradually his tables of addition, subtraction and multiplication, and fixes them in his memory. Then he takes his next higher step; namely, the apprehension of the fraction. This is an expressed ratio of two numbers, and, therefore, a much more complex thought than he has met with in dealing with the simple numbers. In thinking five-sixths, he first thinks five and then six, and holding these two in mind thinks the result of the first modified by the second. Here are three steps instead of one, and the result is not a simple number, but an inference resting on an unperformed operation. This psychological analysis shows the reason for the embarrassment of the child on his entrance upon the study of fractions and the other operations that imply ratio. The teacher finds all his resources in the way of method drawn upon to invent steps and half steps, to aid the pupil to make continuous progress here. All these devices of method consist in steps by which the pupil descends to the simple number and returns to the complex. He turns one of the terms into a qualitative unit, and thus is enabled to use the other as a simple number. The pupil takes the denominator, for example, and makes clear his conception of one-sixth as his qualitative unit, then five-sixths is as clear to him as five oxen. But he has to repeat this return from ratio to simple numbers in each of the elementary operations—addition, subtraction, multiplication and division, and in the reduction of fractions—and finds the road long and tedious at best. In the case of decimal fractions the psychological process is more complex still, for the pupil has given him one of the terms, the numerator, from which he must mentally deduce the denominator from the position of the decimal point. This doubles the work of reading and recognizing the fractional number. But it makes addition and subtraction of fractions nearly as easy as that of simple numbers, and assists also in multiplication of fractions. But division of decimals is a much more complex operation than that of common fractions.

The want of a psychological analysis of these processes has led many good teachers to attempt decimal fractions with their pupils before taking up common fractions. In the end they have been forced to make introductory steps to aid the pupil, and in these steps to introduce the theory of the common fraction. They have by this refuted their own theory.

Besides (*a*) simple numbers and the four operations with them (*b*) fractions common and decimal, there is (*c*) a third step in number; namely, the theory of powers and roots. It is a further step in ratio, namely, the relation of a simple number to itself as power and root. The mass of material which fills the arithmetic used in the elementary school consists of two kinds of examples; first, those wherein there is a direct application of simple numbers, fractions and powers; and secondly, the class of examples involving operations in reaching numerical solutions through indirect data and consequently involving more or less transformation of functions. Of this character is most of the so-called higher arithmetic and such problems in the text book used in the elementary schools as have, not inappropriately, been called (by General Francis A. Walker in his criticism on common school arithmetic) numerical "conundrums." Their difficulty is not found in the strictly arithmetical part of the process of the solution (the third phase above described), but rather in the transformation of the quantitative function given into the function that can readily be calculated numerically. The transformation of functions belong strictly to algebra. Teachers who love arithmetic, and who have themselves success in working out the so-called numerical conundrums, defend with much earnestness the current practice which uses so much time for arithmetic. They see in it a valuable training for ingenuity and logical analysis, and believe that the industry which discovers arithmetical ways of transforming the functions given in such problems into plain numerical operations of adding, subtracting, multiplying or dividing is well bestowed. On the other hand, the critics of this practice contend that there should be no merely formal drill in school for its own sake, and that there should be, always, a substantial content to be gained. They contend that the work of the pupil in transforming quantitative functions by arithmetical methods is wasted, because the pupil needs a more adequate expression than number for this purpose; that this has been discovered in algebra, which enables him to perform with ease such quantitative transformations as puzzle the pupil in arithmetic. They hold, therefore, that arithmetic pure and simple should be abridged and elementary algebra introduced after the numerical operations in powers, fractions and simple numbers have been mastered, together with their applications to the tables of weights and measures and to percentage and interest. In the seventh year of the elementary course there would be taught equations of the first degree and the solution of arithmetical problems that fall under proportion, or the so-called "rule of three," together with other problems containing complicated conditions—those in partnership, for example. In the eighth year quadratic equations could be learned, and other problems of higher arithmetic solved in a more satisfactory manner than by numerical methods. It is contended that this earlier introduction of algebra with a sparing use of letters for known

quantities, would secure far more mathematical progress than is obtained at present on the part of all pupils, and that it would enable many pupils to go into secondary and higher education, who are now kept back on the plea of lack of preparation in arithmetic, the real difficulty in many cases being a lack of ability to solve algebraic problems by an inferior method.

Your committee would report that the practice of teaching two lessons daily in arithmetic, one styled "mental," or "intellectual," and the other "written" arithmetic (because its exercises are written out with pencil or pen) is still continued in many schools. By this device the pupil is made to give twice as much time to arithmetic as to any other branch. It is contended by the opponents of this practice, with some show of reason, that two lessons a day in the study of quantity have a tendency to give the mind a bent or set in the direction of thinking quantitatively, with a corresponding neglect of the power to observe, and to reflect upon qualitative and causal aspects. For mathematics does not take account of causes, but only of equality and difference in magnitude. It is further objected that the attempt to secure what is called thoroughness in the branches taught in the elementary schools is often carried too far; in fact, to such an extent as to produce arrested development (a sort of mental paralysis) in the mechanical and formal stages of growth. The mind, in that case, loses its appetite for higher methods and wider generalizations. The law of apperception, we are told, proves that temporary methods of solving problems should not be so thoroughly mastered as to be used involuntarily, or as a matter of unconscious habit, for the reason that a higher and more adequate method of solution will then be found more difficult to acquire. The more thoroughly a method is learned, the more it becomes part of the mind, and the greater the repugnance of the mind toward a new method. For this reason, parents and teachers discourage young children from the practice of counting on the fingers, believing that it will cause much trouble later to root out this vicious habit and replace it by purely mental processes. Teachers should be careful, especially with precocious children, not to continue too long in the use of a process that is becoming mechanical, for it is already growing into a second nature, and becoming a part of the unconscious apperceptive process by which the mind reacts against the environment, recognizes its presence, and explains it to itself. The child that has been overtrained in arithmetic reacts apperceptively against his environment chiefly by noticing its numerical relations—he counts and adds; his other apperceptive reactions being feeble, he neglects qualities and causal relations. Another child who has been drilled in recognizing colors apperceives the shades of color to the neglect of all else. A third child, excessively trained in form, studies by the constant use of geometric solids, and much practice in looking for the fundamental geometric forms lying at

the basis of the multifarious objects that exist in the world, will, as a matter of course, apperceive geometric forms, ignoring the other phases of objects.

It is, certainly, an advance on immediate sense-perception to be able to separate or analyze the concrete, whole impression, and consider the quantity apart by itself. But if arrested mental growth takes place here, the result is deplorable. That such arrest may be caused by too exclusive training in recognizing numerical relations is beyond a doubt.

Your committee believes that, with the right methods, and a wise use of time in preparing the arithmetic lesson in and out of school, five years are sufficient for the study of mere arithmetic—the five years beginning with the second school year and ending with the close of the sixth year; and that the seventh and eighth years should be given to the algebraic method of dealing with those problems that involve difficulties in the transformation of quantitative indirect functions into numerical or direct quantitative data.

Your committee, however, does not wish to be understood as recommending the transfer of algebra, as it is understood and taught in most secondary schools, to the seventh year, or even to the eighth year of the elementary school. The algebra course in the secondary school, as taught to the pupils in their fifteenth year of age, very properly begins with severe exercises, with a view to discipline the pupil in analyzing complex literate expressions at sight, and to make him able to recognize at once the factors that are contained in such combinations of quantities. The proposed seventh-grade algebra must use letters for the unknown quantities and retain the numerical form of the known quantities, using letters for these very rarely, except to exhibit the general form of solution, or what, if stated in words, becomes a so-called "rule" in arithmetic. This species of algebra has the character of an introduction or transitional step to algebra proper. The latter should be taught thoroughly in the secondary school. Formerly it was a common practice to teach elementary algebra of this sort in the preparatory schools, and reserve for the college a study of algebra proper. But in this case there was often a neglect of sufficient practice in factoring literate quantities, and, as a consequence, the pupil suffered embarrassment in his more advanced mathematics; for example, in analytical geometry, the differential calculus, and mechanics. The proposition of your committee is intended to remedy the two evils already named: first, to aid the pupils in the elementary school to solve, by a higher method, the more difficult problems that now find place in advanced arithmetic; and secondly, to prepare the pupil for a thorough course in pure algebra in the secondary school.

Your committee is of the opinion that the so-called mental arithmetic should be made to alternate with written arithmetic for two years, and that there should not be two daily lessons in this subject.

C. Geography.

The leading branch of the seven liberal arts was grammar, being the first of the *Trivium* (grammar, rhetoric, and logic). Arithmetic, however, led the second division, the *Quadrivium* (arithmetic, geometry, music, and astronomy). We have glanced at the reasons for the place of grammar as leading the humane studies, as well as for the place of arithmetic as leading the nature studies. Following arithmetic, as the second study in importance among the branches that correlate man to nature, is geography. It is interesting to note that the old quadrivium of the Middle Ages included geography, under the title of geometry, as the branch following arithmetic in the enumeration; the subject-matter of their so-called "geometry" being chiefly an abridgment of Pliny's geography, to which were added a few definitions of geometric forms, something like the primary course in geometric solids in our elementary schools. So long as there has been elementary education there has been something of geography included. The Greek education laid stress on teaching the second book of Homer, containing the Catalogue of the Ships and a brief mention of the geography and history of all the Greek tribes that took part in the Trojan War. History remains unseparated from geography and geometry in the Middle Ages. Geography has preserved this comprehensiveness of meaning as a branch of the study in the elementary schools down to the present day. After arithmetic, which treats of the abstract or general conditions of material existence, comes geography, with a practical study of man's material *habitat*, and its relations to him. It is not a simple science by itself, like botany, or geology, or astronomy, but a collection of sciences levied upon to describe the earth as the dwelling-place of man and to explain something of its more prominent features. About one-fourth of the material relates strictly to the geography, about one-half to the inhabitants, their manners, customs, institutions, industries, productions, and the remaining one-fourth to items drawn from the sciences of mineralogy, meteorology, botany, zoology, and astronomy. This predominance of the human feature in a study ostensibly relating to physical nature, your committee considers necessary and entirely justifiable. The child commences with what is nearest to his interests, and proceeds gradually toward what is remote and to be studied for its own sake. It is, therefore, a mistake to suppose that the first phase of geography presented to the child should be the process of continent formation. He must begin with the natural difference of climate, and lands, and waters, and obstacles that separate peoples, and study the methods by which man strives to equalize or overcome these differences by industry and commerce, to unite all places and all people, and make it possible for each to share in the productions of all. The industrial and commercial idea is, therefore, the first central idea in the study of

geography in the elementary schools. It leads directly to the natural elements of difference in climate, soil, and productions, and also to those in race, religion, political status, and occupations of the inhabitants, with a view to explain the grounds and reasons for this counter-process of civilization which struggles to overcome the differences. Next comes the deeper inquiry into the process of continent formation, the physical struggle between the process of upheaving or upbuilding of continents and that of their obliteration by air and water; the explanation of the mountains, valleys, and plains, the islands, volcanic action, the winds, the rain-distribution. But the study of cities, their location, the purposes they serve as collecting, manufacturing, and distributing centres, leads most directly to the immediate purpose of geography in the elementary school. From this beginning, and holding to it as a permanent interest, the inquiry into causes and conditions proceeds concentrically to the sources of the raw materials, the methods of their production, and the climatic, geologic, and other reasons that explain their location and their growth.

In recent years, especially through the scientific study of physical geography, the processes that go to the formation of climate, soil and general configuration of land masses have been accurately determined, and the methods of teaching so simplified that it is possible to lead out from the central idea mentioned to the physical explanations of the elements of geographical difference quite early in the course of study. Setting out from the idea of the use made of the earth by civilization, the pupil in the fifth and sixth years of his schooling (at the age of eleven or twelve) may extend his inquiries quite profitably as far as the physical explanations of land-shapes and climates. In the seventh and eighth year of school much more may be done in this direction. But it is believed that the distinctively human interest connected with geography in the first years of its study should not yield to the purely scientific one of physical processes until the pupil has taken up the study of history.

The educational value of geography, as it is and has been in elementary schools, is obviously very great. It makes possible something like accuracy in the picturing of distant places and events, and removes a large tract of mere superstition from the mind. In the days of newspaper reading one's stock of geographical information is in constant requisition. A war on the opposite side of the globe is followed with more interest this year than a war near our own borders before the era of the telegraph. The general knowledge of the locations and boundaries of nations, of their status in civilization, and their natural advantages for contributing to the world market, is of great use to the citizen in forming correct ideas from his daily reading.

The educational value of geography is even more apparent if we admit the claims of those who argue that the present epoch is the begin-

ning of an era in which public opinion is organized into a ruling force by the agency of periodicals and books. Certainly neither the newspaper nor the book can influence an illiterate people; they can do little to form opinions where the readers have no knowledge of geography.

As to the psychological value of geography little need be said. It exercises in manifold ways the memory of forms and the imagination; it brings into exercise the thinking power in tracing back toward unity the various series of causes. What educative value there is in geology, meteorology, zoology, ethnology, economics, history and politics is to be found in the more profound study of geography, and, to a proportionate extent, in the study of its merest elements.

Your committee is of the opinion that there has been a vast improvement in the methods of instruction in this branch in recent years, due, in large measure, to the geographical societies of this and other countries. At first there prevailed what might be named sailor geography. The pupil was compelled to memorize all the capes and headlands, bays and harbors, mouths of rivers, islands, sounds and straits around the world. He enlivened this, to some extent, by brief mention of the curiosities and oddities in the way of cataracts, water-gaps, caves, strange animals, public buildings, picturesque costumes, national exaggerations and such matters as would furnish good themes for sailors' yarns. Little or nothing was taught to give unity to the isolated details furnished in endless number. It was an improvement on this when the method of memorizing capital cities and political boundaries succeeded. With this came the era of map-drawing. The study of watersheds and commercial routes, of industrial productions and centers of manufactures and commerce, has been adopted in the better class of schools. Instruction in geography is growing better by the constant introduction of new devices to make plain and intelligible the determining influence of physical causes in producing the elements of difference and the counter-process of industry and commerce by which each difference is rendered of use to the whole world, and each locality made a participator in the productions of all.

D. History.

The next study, ranked in order of value, for the elementary school is history. But as will be seen, the value of history, both practically and psychologically, is less in the beginning and greater at the end than geography. For it relates to the institutions of men, and especially to the political state and its evolution. While biography narrates the career of the individual, civil history records the careers of nations. The nation has been compared to the individual by persons interested in the educational value of history. Man has two selves, they say, the individual self and the collective self of the organized State or nation. The

study of history is, then, the study of this larger, corporate, social and civil self. The importance of this idea is thus brought out more clearly in its educational significance. For to learn this civil self is to learn the substantial condition which makes possible the existence of civilized man in all his other social combinations—the family, the Church and the manifold associated activities of civil society. For the State protects these combinations from destruction by violence. It defines the limits of individual and associated effort, within which each endeavor re-enforces the endeavors of all, and it uses the strength of the whole nation to prevent such actions as pass beyond these safe limits and tend to collision with the normal action of the other individuals and social units. Hobbes called the State a Leviathan, to emphasize its stupendous individuality and organized self-activity. Without this, he said, man lives in a state of “constant war, fear, poverty, filth, ignorance and wretchedness; within the State dwell peace, security, riches, science and happiness.” The State is the collective man who makes possible the rational development of the individual man, like a mortal God, subduing his caprice and passion, and compelling obedience to law, developing the ideas of justice, virtue and religion, creating property and ownership, nurture and education.” The education of the child into a knowledge of this higher self begins early within the nurture of the family. The child sees a policeman or some town officer, some public building, a court house or a jail; he sees or hears of an act of violence, a case of robbery or murder, followed by arrest of the guilty. The omnipresent higher self, which has been invisible hitherto, now becomes visible to him in its symbols and still more in its acts.

History in school, it is contended, should be the special branch for education in the duties of citizenship. There is ground for this claim. History gives a sense of belonging to a higher social unity which possesses the right of absolute control over person and property in the interest of the safety of the whole. This, of course, is the basis of citizenship; the individual must feel this or see this solidarity of the State and recognize its supreme authority. But history shows the collisions of nations, and the victory of one political ideal accompanied by the defeat of another. History reveals an evolution of forms of government that are better and better adapted to permit individual freedom, and the participation of all citizens in the administration of the government itself.

People who make their own government have a special interest in the spectacle of political evolution as exhibited in history. But it must be admitted that this evolution has not been well presented by popular historians. Take, for instance, the familiar example of old-time pedagogy, wherein the Roman republic was conceived as a freer government than the Roman empire that followed it, by persons apparently misled by the ideas of representative self-government associated with the word

republic. It was the beginning of a new epoch when this illusion was dispelled, and the college student became aware of the true Roman meaning of *republic*, namely, the supremacy of an oligarchy on the Tiber that ruled distant provinces in Spain, Gaul, Asia Minor, Germany and Africa, for its selfish ends and with an ever-increasing arrogance. The people at home in Rome, not having a share in the campaigns on the borderland, did not appreciate the qualities of the great leaders, who, like Cæsar, subdued the nations by forbearance, magnanimity, trust and the recognition of a sphere of freedom secured to the conquered by the Roman civil laws, which were rigidly enforced by the conqueror, as much as by the violence of arms. The change from republic to empire meant the final subordination of this tyrannical Roman oligarchy, and the recognition of the rights of the provinces to Roman freedom. This illustration shows how easily a poor teaching of history may pervert its good influence or purpose into a bad one. For the Roman monarchy under the empire secured a degree of freedom never before attained under the republic, in spite of the election of such tyrants as Nero and Caligula to the imperial purple. The civil service went on as usual administering the affairs of distant countries, educating them in Roman jurisprudence, and cultivating a love for accumulating private property. Those countries had before lived communistically after the style of the tribe or at best of the village community. Roman private property in land gave an impulse to the development of free individuality such as had always been impossible under the social stage of development known as the village community.

To teach history properly is to dispel this shallow illusion which flatters individualism, and to open the eyes of the pupil to the true nature of freedom, namely, the freedom through obedience to just laws enforced by a strong government.

Your committee has made this apparent digression for the sake of a more explicit statement of its conviction of the importance of teaching history in a different spirit from that of abstract freedom, which sometimes means anarchy, although they admit the possibility of an opposite extreme, the danger of too little stress on the progressive element in the growth of nations, and its manifestation in new and better political devices for representing all citizens without weakening the central power.

That the history of one's own nation is to be taught in the elementary school seems fixed by common consent. United States history includes first a sketch of the epoch of discoveries and next of the epoch of colonization. This, fortunately, suits the pedagogic requirements. For the child loves to approach the stern realities of a firmly established civilization through its stages of growth by means of individual enterprise. Here is the use of biography as introduction to history. It treats of exceptional individuals whose lives bring them in one way or another

into national or even world-historical relations. They throw light on the nature and necessity of governments, and are in turn illuminated by the light thrown back on them by the institutions which they promote or hinder. The era of semi-private adventure with which American history begins is admirably adapted for study by the pupil in the elementary stage of his education. So, too, the next epoch, that of colonization. The pioneer is a degree nearer to civilization than is the explorer and discoverer. In the colonial history the pupil interests himself in the enterprise of aspiring individualities, in their conquest over obstacles of climate and soil; their conflicts with the aboriginal population; their choice of land for settlement; the growth of their cities; above all, their several attempts and final success in forming a constitution securing local self-government. An epoch of growing interrelation of the colonies succeeds, a tendency to union on a large scale due to the effect of European wars which involved England, France and other countries, and affected the relations of their colonies in America. This epoch, too, abounds in heroic personalities, like Wolfe, Montcalm and Washington, and perilous adventures, especially in the Indian warfare.

The fourth epoch is the Revolution, by which the colonies, through joint effort, secured their independence and afterward their union as a nation. The subject grows rapidly more complex, and tasks severely the powers of the pupils in the eighth year of the elementary school. The formation of the Constitution, and a brief study of the salient features of the Constitution itself, conclude the study of the portion of the history of the United States that is sufficiently remote to be treated after the manner of an educational classic. Everything up to this point stands out in strong individual outlines, and is admirably fitted for that elementary course of study. Beyond this point, the War of 1812 and the War of the Rebellion, together with the political events that led to it, are matters of memory with the present generation of parents and grandparents, and are, consequently, not so well fitted for intensive study in school as the already classic period of our history. But these later and latest epochs may be, and will be, read at home not only in the textbook on history used in the schools, but also in the numerous sketches that appear in newspapers, magazines, and in more pretentious shapes. In the intensive study which should be undertaken of the classic period of our history, the pupil may be taught the method appropriate to historical investigation, the many points of view from which each event ought to be considered. He should learn to discriminate between the theatrical show of events and the solid influences that move underneath as ethical causes. Although he is too immature for very far-reaching reflections, he must be helped to see the causal processes of history. Armed with this discipline in historic methods, the pupil will do all of his miscellaneous reading and thinking in this province with more adequate intellectual reaction than was possible before the intensive study carried on in school.

The study of the outlines of the Constitution for ten or fifteen weeks in the final year of the elementary school, has been found of great educational value. Properly taught, it fixes the idea of the essential threefoldness of the constitution of a free government and the necessary independence of each constituent power, whether legislative, judicial or executive. This and some idea of the manner and mode of filling the official places in these three departments, and of the character of the duties with which each department is charged, lay foundations for an intelligent citizenship.

Besides this intensive study of the history of the United States in the seventh and eighth years, your committee would recommend oral lessons on the salient points of general history, taking a full hour of sixty minutes weekly—and preferably all at one time—for the sake of the more systematic treatment of the subject of the lesson and the deeper impression made on the mind of the pupil.

E. Other branches.

Your committee has reviewed the staple branches of the elementary course of study in the light of their educational scope and significance. Grammar, literature, arithmetic, geography and history are the five branches upon which the disciplinary work of the elementary school is concentrated. Inasmuch as reading is the first of the scholastic arts, it is interesting to note that the whole elementary course may be described as an extension of the process of learning the art of reading. First comes the mastering of the colloquial vocabulary in printed and script forms. Next comes five incursions into the special vocabularies required (*a*) in literature to express the fine shades of emotion and the more subtle distinctions of thought, (*b*) the technique of arithmetic, (*c*) of geography, (*d*) of grammar, (*e*) of history.

In the serious work of mastering these several technical vocabularies the pupil is assigned daily tasks that he must prepare by independent study. The class exercise or recitation is taken up with examining and criticizing the pupil's oral statements of what he has learned, especial care being taken to secure the pupil's explanation of it in his own words. This requires paraphrases and definitions of the new words and phrases used in technical and literary senses, with a view to insure the addition to the mind of the new ideas corresponding to the new words. The misunderstandings are corrected and the pupil set on the way to use more critical alertness in the preparation of his succeeding lessons. The pupil learns as much by the recitations of his fellow-pupils as he learns from the teacher, but not the same things. He sees in the imperfect statements of his classmates that they apprehended the lesson with different presuppositions and consequently have seen some phases of the subject that escaped his observation, while they in turn

have missed points which he had noticed quite readily. These different points of view become more or less his own, and he may be said to grow by adding to his own mind the minds of others.

It is clear that there are other branches of instruction that may lay claim to a place in the course of study in the elementary school; for example, the various branches of natural science, vocal music, manual training, physical culture, drawing, etc.

Here the question of another method of instruction is suggested. There are lessons that require previous preparation by the pupil himself—there are also lessons that may be taken up without such preparation and conducted by the teacher, who leads the exercise and furnishes a large part of the information to be learned, enlisting the aid of members of the class for the purpose of bringing home the new material to their actual experience. Besides these, there are mechanical exercises for purposes of training, such as drawing, penmanship and calisthenics.

In the first place, there is industrial and æsthetic drawing, which should have a place in all elementary school work. By it is secured the training of the hand and eye. Then, too, drawing helps in all the other branches that require illustration. Moreover, if used in the study of the great works of art in the way hereinbefore mentioned, it helps to cultivate the taste and prepares the future workman for a more useful and lucrative career, inasmuch as superior tastes commands higher wages in the finishing of all goods.

Natural science claims a place in the elementary school not so much as a disciplinary study side by side with grammar, arithmetic, and history, as a training in habits of observation and in the use of the technique by which such sciences are expounded. With a knowledge of the technical terms and some training in the methods of original investigation employed in the sciences, the pupil broadens his views of the world and greatly increases his capacity to acquire new knowledge. For the pupil who is unacquainted with the technique of science has to pass without mental profit the numerous scientific allusions and items of information which more and more abound in all our literature, whether of an ephemeral or a permanent character. In an age whose proudest boast is the progress of science in all domains, there should be in the elementary school, from the first, a course in the elements of the sciences. And this is quite possible; for each science possesses some phases that lie very near to the child's life. These familiar topics furnish the doors through which the child enters the various special departments. Science, it is claimed, is nothing if not systematic. Indeed, science itself may be defined as the interpretation of each fact through all other facts of a kindred nature. Admitting that this is so, it is no less true that pedagogic method begins with the fragmentary knowledge possessed by the pupil and proceeds to organize it and build it

out systematically in all directions. Hence any science may be taken up best on the side nearest the experience of the pupil and the investigation continued until the other parts are reached. Thus the pedagogical order is not always the logical or scientific order. In this respect it agrees with the order of discovery, which is usually something quite different from the logical order; for that is the last thing discovered. The natural sciences have two general divisions: one relating to inorganic matter, as physics and chemistry, and one relating to organic, as botany and zoology. There should be a spiral course in natural science, commencing each branch with the most interesting phases to the child. A first course should be given in botany, zoology and physics, so as to treat of the structure and uses of familiar plants and animals, and the explanation of physical phenomena as seen in the child's playthings, domestic machines, etc. A second course, covering the same subjects, but laying more stress on classification and functions, will build on to the knowledge already acquired from the former lessons and from his recently acquired experience. A third course of weekly lessons, conducted by the teacher as before in a conversational style, with experiments and with a comparison of the facts of observation already in the possession of the children, will go far to helping them to an acquisition of the results of natural science. Those of the children specially gifted for observation in some one or more departments of nature will be stimulated and encouraged to make the most of their gifts.

In the opinion of your committee, there should be set apart a full hour each week for drawing and the same amount for oral lessons in natural science.

The oral lessons in history have already been mentioned. The spiral course, found useful in natural science because of the rapid change in capacity of comprehension by the pupil from his sixth to his fourteenth year, will also be best for the history course, which will begin with biographical adventures of interest to the child, and possessing an important historical bearing. These will proceed from the native land first to England, the parent country, and then to the classic civilizations (Greece and Rome being, so to speak, the grandparent countries of the American colonies). These successive courses of oral lessons adapted respectively to the child's capacity will do much to make the child well informed on this topic. Oral lessons should never be mere lectures, but more like Socratic dialogues, building up a systematic knowledge partly from what is already known, partly by new investigations, and partly by comparison of authorities.

The best argument in favor of weekly oral lessons in natural science and general history is the actual experiences of teachers who have for some time used the plan. It has been found that the lessons in botany, zoology and physics give the pupil much aid in learning his geography, and other lessons relating to nature, while the history lessons assist

very much his comprehension of literature, and add interest to geography.

It is understood by your committee that the lessons in physiology and hygiene (with special reference to the effects of stimulants and narcotics) required by State laws should be included in this oral course in natural science. Manual training, so far as the theory and use of the tools for working in wood and iron are concerned, has just claims on the elementary school for a reason similar to that which admits natural science. From science have proceeded useful inventions for the aid of all manner of manufactures and transportation. The child of to-day lives in a world where machinery is constantly at his hand. A course of training in wood and iron-work, together with experimental knowledge of physics or natural philosophy, makes it easy for him to learn the management of such machines. Sewing and cookery have not the same, but stronger claims for a place in school. One-half day in each week for one-half a year each in the seventh and eighth grades will suffice for manual training, the sewing and cookery being studied by the girls, and the wood and iron work by the boys. It should be mentioned, however, that the advocates of manual training in iron and wood work recommend these branches for secondary schools, because of the greater maturity of body, and the less likelihood to acquire wrong habits of manipulation in the third period of four years of school.

Vocal music has long since obtained a well-established place in all elementary schools. The labors of two generations of special teachers have reduced the steps of instruction to such simplicity that whole classes may make as regular progress in reading music as in reading literature.

In regard to physical culture your committee is agreed that there should be some form of special daily exercises amounting in the aggregate to one hour each week, the same to include the main features of calisthenics, and German, Swedish, or American systems of physical training, but not to be regarded as a substitute for the old-fashioned recess, established to permit the free exercise of the pupils in the open air. Systematic, physical training has for its object rather the will training than recreation, and this must not be forgotten. To go from a hard lesson to a series of calisthenic exercises is to go from one kind of will training to another. Exhaustion of the will should be followed by the caprice and wild freedom of the recess. But systematic physical exercise has its sufficient reason in its aid to a graceful use of the limbs, its development of muscles that are left unused or rudimentary, unless called forth by special training, and for the help it gives to the teacher in the way of school discipline.

Your committee would mention in this connection instruction in morals and manners, which ought to be given in a brief series of lessons each year with a view to build up in the mind a theory of the conventionali-

ties of polite and pure-minded society. If these lessons are made too long or too numerous, they are apt to become offensive to the child's mind. It is of course understood by your committee that the substantial moral training of the school is performed by the discipline rather than by the instruction in ethical theory. The child is trained to be regular and punctual, and to restrain his desire to talk and whisper—in these things gaining self-control day by day. The essence of moral behavior is self-control. The school teaches good behavior. The intercourse of a pupil with his fellows without evil words or violent actions is insisted on and secured. The higher moral qualities of truth-telling and sincerity are taught in every class exercise that lays stress on accuracy of statement.

Your committee has already discussed the importance of teaching something of algebraic processes in the seventh and eighth grades, with the view to obtaining better methods of solving problems in advanced arithmetic; a majority of your committee are of the opinion that formal English grammar should be discontinued in the eighth year, and the study of some foreign language, preferably that of Latin, substituted. The educational effect on an English speaking pupil of taking up a language which, like Latin, uses inflections instead of prepositions, and which further differs from English by the order in which its words are arranged in the sentence, is quite marked, and a year of Latin places a pupil by a wide interval out of the range of the pupil who has continued English grammar without taking up Latin. But the effect of the year's study of Latin increases the youth's power of apperception in very many directions by reason of the fact that so much of the English vocabulary used in technical vocabularies, like those of geography, grammar, history and literature, is from a Latin source, and besides there are so many traces in the form and substance of human learning of the hundreds of years when Latin was the only tongue in which observation and reflection could be expressed.

Your committee refers to the programme given later in this report for the details of co-ordinating these several branches already recommended.

The difference between elementary and secondary studies.

In recommending the introduction of algebraic processes in the seventh and eighth years—as well as in the recommendation just now made to introduce Latin in the eighth year of the elementary course—your committee has come face to face with the question of the intrinsic difference between elementary and secondary studies.

Custom has placed algebra, geometry, the history of English literature, and Latin in the rank of secondary studies; also general history, physical geography and the elements of physics and chemistry. In a

secondary course of four years trigonometry may be added to the mathematics; some of the sciences whose elements are used in physical geography may be taken up separately in special treatises, as geology, botany and physiology. There may be also a study of whole works of English authors, as Shakespeare, Milton and Scott. Greek is also begun in the second or third year of the secondary course. This is the custom in most public high schools. But in private secondary schools Latin is begun earlier, and so, too, Greek, algebra and geometry. Sometimes geometry is taken up before algebra, as is the custom in German schools. These arrangements are based partly on tradition, partly on the requirements of higher institutions for admission, and partly on the ground that the intrinsic difficulties in these studies have fixed their places in the course of study. Of those who claim that there is an intrinsic reason for the selection and order of these studies, some base their conclusions on experience in conducting pupils through them, others on psychological grounds. The latter contend, for example, that algebra deals with general forms of calculation, while arithmetic deals with the particular instances of calculation. Whatever deals with the particular instance is relatively elementary, whatever deals with the general form is relatively secondary. In the expression $a + b = c$ algebra indicates the form of all addition. This arithmetic cannot do, except in the form of a verbal rule describing the steps of the operation; its examples are all special instances falling under the general form given in algebra. If, therefore, arithmetic is an elementary branch, algebra is relatively to it a secondary branch. So, too, geometry, though not directly based on arithmetic, has to presuppose an acquaintance with it when it reduces spatial functions into numerical forms, as, for example, in the measurement of surfaces and solids, and in ascertaining the ratio of the circumference to the radius and of the hypotenuse to the two other sides of the right-angled triangle. Geometry, moreover, deals with necessary relations; its demonstrations reach universal and necessary conclusions, holding good not merely in such material shapes as we have met with in actual experience, but with all examples possible, past, present or future. Such knowledge transcending experience is intrinsically secondary as compared with the first acquaintance with geometric shapes in concrete examples.

In the case of geometry it is claimed by some that what is called "inventive geometry" may be properly introduced into the elementary grades. By this some mean the practice with blocks in the shape of geometric solids, and the construction of different figures from the same; others mean the rediscovery by the pupil for himself of the necessary relations demonstrated by Euclid. The former—exercises of construction with blocks—are well enough in the kindergarten, where they assist in learning number, as well as in the analysis of material forms. But its educational value is small for pupils advanced into the use of

books. The original discovery of Euclid's demonstrations, on the other hand, belongs more properly to higher education than to elementary. In the geometrical text-books, recently introduced into secondary schools, there is so much of original demonstration required that the teacher is greatly embarrassed on account of the differences in native capacity for mathematics that develop among the pupils of the same class in solving the problems of invention. A few gifted pupils delight in the inventions, and develop rapidly in power, while the majority of the class use too much time over them, and thus rob the other branches of the course of study, or else fall into the bad practice of getting help from others in the preparation of their lessons. A few in every class fall hopelessly behind and are discouraged. The result is an attempt on the part of the teacher to correct the evil by requiring a more thorough training in the mathematical studies preceding, and the consequent delay of secondary pupils in the lower grades of the course in order to bring up their "inventional geometry." Many, discouraged, fail to go on; many more fail to reach higher studies because unable to get over the barrier unnecessarily placed before them by teachers who desire that no pupils except natural geometricians shall enter into higher studies.

Physical geography in its scientific form is very properly made a part of the secondary course of study. The pupil in his ninth year of work can profitably acquire the scientific technique of geology, botany, zoology, meteorology and ethnology, and in the following years take up those sciences separately and push them further, using the method of actual investigation. The subject-matter of physical geography is of very high interest to the pupil who has studied geography in the elementary grades after an approved method. It takes up the proximate grounds and causes for the elements of difference on the earth's surface, already become familiar to him through his elementary studies, and pushes them back into deeper, simpler and more satisfactory principles. This study performs the work also of correlating the sciences that relate to organic nature by showing their respective uses to man. From the glimpses which the pupil gets of mineralogy, geology, botany, zoology, ethnology and meteorology in their necessary connection as geographic conditions he sees the scope and grand significance of those separate inquiries. A thirst is aroused in him to pursue his researches into their domains. He sees, too, the borderlands in which new discoveries may be made by the enterprising explorer.

Physics, including what was called until recently "natural philosophy," after Newton's *Principia (Philosophiæ naturalis principia mathematica)*, implies more knowledge of mathematics for its thorough discussion than the secondary pupil is likely to possess. In fact, the study of this branch in college thirty years ago was crippled by the same cause. It should follow the completion of analytical geometry. Notwithstanding this, a very profitable study of this subject may be

made in the second year of the high school or preparatory school, although the formulas can then be understood in so far as they imply elementary algebra only. The pupil does not get the most exact notions of the quantitative laws that rule matter in its states of motion and equilibrium, but he does see the action of forces as qualitative elements of phenomena, and understand quite well the mechanical inventions by which men subdue them for his use and safety. Even in the elementary grades the pupil can seize very many of these qualitative aspects and learn the explanation of the mechanical phenomena of nature, and other applications of the same principles in invention, as, for example, gravitation in falling bodies: its measurement by the scales; the part it plays in the pump, the barometer, the pendulum; cohesion in mud, clay, glue, paste, mortar, cement, etc.; capillary attraction in lamp-wicks, sponges, sugar, the sap in plants; the applications of lifting by the lever, pulley, inclined plane, wedge, and screw; heat in the sun, combustion, friction steam, thermometer, conduction, clothing, cooking, etc.; the phenomena of light, electricity, magnetism, and the explanation of such mechanical devices as spectacles, telescopes, microscopes, prisms, photographic cameras, electric tension in bodies, lightning, mariner's compass, horseshoe magnet, the telegraph, the dynamo. This partially qualitative study of forces and mechanical inventions has the educational effect of enlightening the pupil, and emancipating him from the network of superstition that surrounds him in the child world, partly of necessity and partly by reason of the illiterate adults that he sometimes meets with in the persons of nurses, servants, and tradespeople, whose occupations have more attractions for him than those of cultured people. The fairy world is a world of magic, of immediate interventions of supernatural spiritual beings, and while this is proper enough for the child up to the time of the school, and in a lessening degree for some time after, it is only negative and harmful in adult manhood and womanhood. It produces arrested development of powers of observation and reflection in reference to phenomena, and stops the growth of the soul at the infantine stage of development. Neither is this infantine stage of wonder and magic more religious than the stage of disillusion through the study of mathematics and physics. It is the arrest of religious development, also, at the stage of fetichism. The highest religion, that of pure Christianity, sees in the world infinite meditations, all for the purpose of developing independent individuality; the perfection of human souls not only in one kind of piety, namely, that of the heart, but in the piety of the intellect that beholds truth, the piety of the will that does good deeds wisely, the piety of the senses that sees the beautiful and realizes it in works of art. This is the Christian idea of Divine Providence as contrasted with the heathen idea of that Providence, and the study of natural philosophy is an essential educational requisite in its attainment, although a negative means. Of

course there is danger of replacing the spiritual idea of the divine by the dynamical or mechanical idea, and thus arresting the mind at the stage of pantheism instead of fetichism. But this danger can be avoided by further education through secondary into higher education, whose entire spirit and method are comparative and philosophical in the best sense of the term. For higher education seems to have as its province the correlation of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization. By it one learns to see each branch, each science or art or discipline, in the light of all the others. This higher or comparative view is essential to any completeness of education, for it alone prevents the one-sidedness of hobbies, or "fads," as they are called in the slang of the day. It prevents also the bad effects that flow from the influence of what are termed "self-educated men," who for the most part carry up with them elementary methods of study, or at best, secondary methods, which accentuate the facts and relations of natural and spiritual phenomena, but do not deal with their higher correlations. The comparative method cannot, in fact, be well introduced until the student is somewhat advanced, and has already completed his elementary course of study dealing with the immediate aspects of the world, and his secondary course dealing with the separate formal and dynamical aspects that lie next in order behind the facts of first observation. Higher education in a measure unifies these separate formal and dynamic aspects, corrects their one-sidedness, and prevents the danger of what is so often noted in the self-educated men who unduly exaggerate some one of the subordinate aspects of the world and make it a sort of first principle.

Here your committee finds in its way the question of the use of the full scientific method in the teaching of science in the elementary school. The true method has been called the method of investigation, but that method as used by the child is only a sad caricature of the method used by the mature scientific man, who has long since passed through the fragmentary observation and reflection that prevail in the period of childhood, as well as the tendencies to exaggeration of the importance of one or another branch of knowledge at the expense of the higher unity that correlates all; an exaggeration that manifests itself in the possession and use of a hobby. The ideal scientific man has freed himself from obstacles of this kind, whether psychological or objective. What astronomical observers call the subjective coefficient must be ascertained and eliminated from the record that shows beginnings, endings and rates. There is a possibility of perfect specialization in a scientific observer only after the elementary and secondary attitudes of mind have been outgrown. An attempt to force the child into the full scientific method by specialization would cause an arrest of his development in the other branches of human learning outside of his specialty. He could not properly inventory the data of his own special sphere unless he knew

how to recognize the defining limits or boundaries that separate his province from its neighbors. The early days of science abounded in examples of confusion of provinces in the inventories of their data. It is difficult, even now, to decide where physics and chemistry leave off, and biology begins.

Your committee does not attempt to state the exact proportion in which the child, at his various degrees of advancement, may be able to dispense with the guiding influence of teacher and textbook in his investigations; but they protest strongly against the illusion under which certain zealous advocates of the early introduction of scientific method seem to labor. They ignore in their zeal the deduction that is to be made for the guiding hand of the teacher, who silently furnishes to the child the experience that he lacks, and quietly directs his special attention to this or to that phase, and prevents him from hasty or false generalization as well as from undue exaggeration of single facts or principles. Here the teacher adds the needed scientific outlook which the child lacks, but which the mature scientist possesses for himself.

It is contended by some that the scientific frame of mind is adapted only to science, but not to art, literature and religion, which have something essential that science does not reach; not because of the incompleteness of the sciences themselves, but because of the attitude of the mind assumed in the observation of nature. In analytic investigation there is isolation of parts one from another, with a view to find the sources of the influences which produce the phenomena shown in the object. The mind brings everything to the test of this idea. Every phenomenon that exists comes from beyond itself, and analysis will be able to trace the source.

Now, this frame of mind, which insists on a foreign origin of all that goes to constitute an object, debars itself in advance from the province of religion, art and literature, as well as of philosophy. For self-determination, personal activity, is the first principle assumed by religion, and it is tacitly assumed by art and literature, Classic and Christian. The very definition of philosophy implies this, for it is the attempt to explain the world by the assumption of a first principle, and to show that all classes of objects imply that principle as ultimate presupposition. According to this view it is important not to attempt to hasten the use of a strictly scientific method on the part of the child. In his first years he is acquiring the results of civilization rather as an outfit of habits, usages and traditions than as a scientific discovery. He cannot be expected to stand over against the culture of his time, and challenge one and all of its conventionalities to justify themselves before his reason. His reason is too weak. He is rather in the imitation stage of mind than in that of criticism. He will not reach the comparative or critical method until the era of higher education.

However this may be, it is clear that the educational value of science

and its method is a very important question, and that on it depends the settlement of the question where specialization may begin. To commence the use of the real scientific method would imply a radical change also in methods from the beginning. This may be realized by considering the hold which even the kindergarten retains upon symbolism and upon art and literature. But in the opinion of a majority of your committee, natural science itself should be approached, in the earliest years of the elementary school, rather in the form of results, with glimpses into the methods by which these results were reached. In the last two years (the seventh and eighth) there may be some strictness of scientific form and an exhibition of the method of discovery. The pupil, too, may to some extent put this method in practice himself. In the secondary school there should be some laboratory work. But the pupil cannot be expected to acquire for himself fully the scientific method of dealing with nature until the second part of higher education—its post-graduate work. Nevertheless this good should be kept in view from the first year of the elementary school, and there should be a gradual and continual approach to it.

In the study of general history appears another branch of the secondary course. History of the native land is assumed to be an elementary study. History of the world is certainly a step further away from the experience of the child. It is held by some teachers to be in accordance with proper method to begin with the foreign relations of one's native land and to work outward to the world-history. The European relations involved in the discovery and colonization of America furnish the only explanation to a multitude of questions that the pupil has started in the elementary school. He should move outward from what he has already learned, by the study of a new concentric circle of grounds and reasons, according to this view. This, however, is not the usual course taken. On beginning secondary history the pupil is set back face to face with the period of tradition, just when historic traces first make their appearance. He is, by this arrangement, broken off from the part of history that he has become acquainted with, and made to grapple with that period which has no relation to his previous investigations. It is to be said, however, that general history lays stress on the religious thread of connection, though less now than formerly. The world history is a conception of the great Christian thinker, St. Augustine, who held that the world and its history is a sort of antiphonic hymn, in which God reads his counsels, and the earth and man read the responses. He induced Orosius, his pupil, to sketch a general history in the spirit of his view. It was natural that the Old Testament histories, and especially the chapters of Genesis, should furnish the most striking part of its contents. This general history was connected with religion, and brought closer to the experience of the individual than the history of his own people. To commence history with the Garden of Eden, the

Fall of Man and the Noachian Deluge was to begin with what was most familiar to all minds, and most instructive, because it concerned most nearly the conduct of life. Thus religion furnished the apperceptive material by which the early portions of history were recognized, classified and made a part of experience.

Now that studies in archæology, especially those in the Nile and Euphrates valleys, are changing the chronologies and the records of early times and adding new records of the past, bringing to light national movements and collisions of peoples, together with data by which to determine the status of their industrial civilization, their religious ideas and the form of their literature and art, the concentric arrangement of all this material around the history of the chosen people as a nucleus is no longer possible. The question has arisen, therefore, whether general history should not be rearranged for the secondary school, and made to connect with American history for apperceptive material rather than with Old Testament history. To this it has been replied with force that the idea of a world history, as St. Augustine conceived it, is the noblest educative ideal ever connected with the subject of history. Future versions of general history will not desert this standpoint, we are told, even if they take as their basis that of ethnology and anthropology, for these, too, will exhibit a plan in human history—an educative principle that leads nations toward freedom and science, because the Creator of nature has made it, in its fundamental constitution, an evolution or progressive development of individuality. Thus the idea of divine Providence is retained, though made more comprehensive by bringing the whole content of natural laws within his will as his method of work.

These considerations, we are reminded by the partisans of human-ity studies, point back to the educative value of history as corrective of the one-sidedness of the method of science. Science seeks explanation in the mechanical conditions of, and impulses received from, the environment, while history keeps its gaze fixed on human purposes, and studies the genesis of national actions through the previous stages of feelings, convictions and conscious ideas. In history the pupil has for his object self-activity, reaction against environment, instead of mechanism, or activity through another.

The history of English literature is another study of the secondary school. It is very properly placed beyond the elementary school, for as taught it consists largely of biographies of men of letters. The pupils who have not yet learned any great work of literature should not be pestered with literary biography, for at that stage the greatness of the men of letters cannot be seen. Plutarch makes great biographies because he shows heroic struggles and great deeds. The heroism of artists and poets consists in sacrificing all for the sake of their creations. The majority of them come off sadly at the hands of the biographer, for the reason that the very sides of their lives are described which they had

slighted and neglected for the sake of the Muses. The prophets of Israel did not live in city palaces, but in caves: they did not wear fine raiment, nor feed sumptuously, nor conform to the codes of polite society. They were no courtiers when they approached the king. They neglected all the other institutions—family, productive industry and state—for the sake of one, the Church, and even that not the established ceremonial of the people, but a higher and more direct communing with Jehovah. So with artists and men of letters, it is more or less the case, that the institutional side of their lives is neglected, or unsymmetrical, or if this is not the case, it will be found prosaic and uneventful, throwing no light on their matchless productions.

For these reasons, should not the present use of literary biography as it exists in secondary schools, and is gradually making its way into elementary schools be discouraged, and the time now given to it devoted to the study of literary works of art? It will be admitted that the exposure of the foibles of artists has an immoral tendency on youth: for example, one affects to be a poet, and justifies laxity and self-indulgence through the example of Byron. Those who support this view hold that we should not dignify the immoral and defective side of life by making it a branch of study in school.

Correlation by synthesis of studies.

Your committee would mention another sense in which the expression correlation of studies is sometimes used. It is held by advocates of an artificial center of the course of study. They use, for example, De Foe's Robinson Crusoe for a reading exercise, and connect with it the lessons in geography and arithmetic. It has been pointed out by critics of this method that there is always danger of covering up the literary features of the reading matter under accessories of mathematics and natural science. If the material for other branches is to be sought for in connection with the literary exercise, it will distract the attention from the poetic unity. On the other hand, arithmetic and geography cannot be unfolded freely and comprehensively if they are to wait on the opportunities afforded in a poem or novel for their development. A correlation of this kind, instead of being a deeper correlation, such as is found in all parts of human learning by the studies of the college and university, is rather a shallow and uninteresting kind of correlation, that reminds one of the system of mnemonics, or artificial memory, which neglects the association of facts and events with their causes and the history of their evolution, and looks for unessential quips, puns or accidental suggestions with a view to strengthening the memory. The effect of this is to weaken the power of systematic thinking which deals with essential relations, and substitute for it a chaotic memory that ties together things through false and seeming relations, not of the things and events, but of the words that denote them.

The correlation of geography and arithmetic and history in and through the unity of a work of fiction is at best an artificial correlation, which will stand in the way of the true objective correlation. It is a temporary scaffolding made for school purposes. Instruction should avoid such temporary structures as much as possible, and when used they should be only used for the day, and not for the year, because of the danger of building up an apperceptive center in the child's mind that will not harmonize with the true apperceptive center required by the civilization. The story of Robinson Crusoe has intense interest to the child as a lesson in sociology, showing him the helplessness of isolated man and the re-enforcement that comes to him through society. It shows the importance of the division of labor. All children should read this book in the later years of the elementary course, and a few profitable discussions may be had in school regarding its significance. But DeFoe painted in it only the side of adventure that he found in his countrymen in his epoch, England after the defeat of the Armada having taken up a career of conquest on the seas, ending by colonization and a world commerce. The liking for adventure continues to this day among all Anglo-Saxon peoples, and beyond other nationalities there is in English-speaking populations a delight in building up civilization from the very foundation. This is only, however, one phase of the Anglo-Saxon mind. Consequently the history of Crusoe is not a proper center for a year's study in school. It omits cities, governments, the world commerce, the international process, the church, the newspaper and book from view, and they are not even reflected in it.

Your committee would call attention in this connection to the importance of the pedagogical principle of analysis and isolation as preceding synthesis and correlation. There should be rigid isolation of the elements of each branch for the purpose of getting a clear conception of what is individual and peculiar in a special province of learning. Otherwise one will not gain from each its special contribution to the whole. That there is some danger from the kind of correlation that essays to teach all branches in each will be apparent from this point of view.

III. THE SCHOOL PROGRAMME.

In order to find a place in the elementary school for the several branches recommended in this report, it will be necessary to use economically the time allotted for the school term, which is about two hundred days, exclusive of vacations and holidays. Five days per week and five hours of actual school work or a little less per day, after excluding recesses for recreation, give about twenty-five hours per week. There should be, as far as possible, alternation of study-hours and recitations (the word recitation being used in the United States for class exercise or lesson conducted by the teacher and requiring the critical attention of the entire class). Those studies requiring the clearest thought should be

taken up, as a usual thing, in the morning session, say arithmetic in the second half hour of the morning and grammar the half hour next succeeding the morning recess for recreation in the open air. By some who are anxious to prevent study at home, or at least to control its amount, it is thought advisable to place the arithmetic lesson after the grammar lesson, so that the study learned at home will be grammar instead of arithmetic. It is found by experience that if mathematical problems are taken home for solution two bad habits arise; namely, in one case, the pupil gets assistance from his parents or others, and thereby loses to some extent his own power of overcoming difficulties by brave and persistent attacks unaided by others; the other evil is a habit of consuming long hours in the preparation of a lesson that should be prepared in thirty minutes, if all the powers of mind are fresh and at command. An average child may spend three hours in the preparation of an arithmetic lesson. Indeed, in repeated efforts to solve one of the so-called "conundrums," a whole family may spend the entire evening. One of the unpleasant results of the next day is that the teacher who conducts the lesson never knows the exact capacity and rate of progress of his pupils; in the recitation he probes the knowledge and preparation of the pupil, plus an unknown amount of preparatory work borrowed from parents and others. He even increases the length of the lessons, and requires more work at home, when the amount already exceeds the unaided capacity of the pupil.

The lessons should be arranged so as to bring in such exercises as furnish relief from intellectual tension between others that make large demands on the thinking powers. Such exercises as singing and calisthenics, writing and drawing, also reading, are of the nature of a relief from those recitations that tax the memory, critical alertness and introspection, like arithmetic, grammar and history.

Your committee has not been able to agree on the question whether pupils who leave school early should have a course of study different from the course of those who are to continue on into secondary and higher work. It is contended, on the one hand, that those who leave early should have a more practical course and that they should dispense with those studies that seem to be in the nature of preparatory work for secondary and higher education. Such studies as algebra and Latin, for example, should not be taken up unless the pupil expects to pursue the same for a sufficient time to complete the secondary course. It is replied, on the other hand, that it is best to have one course for all, because any school education is at best but an initiation for the pupil into the art of learning, and that wherever he leaves off in his school course he should continue, by the aid of the public library and home study, in the work of mastering science and literature. It is further contended that a brief course in higher studies, like Latin and algebra, instead of being useless, is of more value than any elementary studies that

might replace them. The first ten lessons in algebra give the pupil the fundamental idea of the general expression of arithmetical solutions by means of letters and other symbols. Six months' study of it gives him the power to use the method in stating the manifold conditions of a problem in partnership, or in ascertaining a value that depends on several transformations of the data given. It is claimed, indeed, that the first few lessons in any branch are relatively of more educational value than an equal number of subsequent lessons, because the fundamental ideas and principles of the new study are placed at the beginning. In Latin, for instance, the pupil learns in his first week's study the, to him, strange phenomenon of a language that performs by inflections what his own language performs by the use of prepositions and auxiliaries. He is still more surprised to find that the order of words in a sentence is altogether different in Roman usage from that to which he is accustomed. He further begins to recognize in the Latin words many roots or stems which are employed to denote immediate sensuous objects, while they have been adopted into his English tongue to signify fine shades of distinction in thought or feeling. By these three things his powers of observation in matters of language are armed, as it were, with new faculties. Nothing that he has hitherto learned in grammar is so radical and far-reaching as what he learns in his first week's study of Latin. The Latin arrangement of words in a sentence indicates a different order of mental arrangement in the process of apprehension and expression of thought. This arrangement is rendered possible by declensions. This amounts to attaching prepositions to the ends of the words, which they thus convert into adjectival or adverbial modifiers; whereas the separate prepositions of the English must indicate by their position in the sentence their grammatical relation. These observations, and the new insight into the etymology of English words having a Latin derivation, are of the nature of mental seeds which will grow and bear fruit throughout life in the better command of one's native tongue. All this will come from a very brief time devoted to Latin in school.

Amount of time for each branch.

Your committee recommends that an hour of sixty minutes each week be assigned in the programme for each of the following subjects throughout the eight years; physical culture, vocal music, oral lessons in natural science (hygiene to be included among the topics under this head), oral lessons in biography and general history, and that the same amount of time each week shall be devoted to drawing from the second year to the eighth inclusive; to manual training during the seventh and eighth years so as to include sewing and cookery for the girls, and work in wood and iron for the boys.

Your committee recommends that reading be given at least one

lesson each day for the entire eight years, it being understood, however, that there shall be two or more lessons each day in reading in the first and second years, in which the recitation is necessarily very short, because of the inability of the pupil to give continued close attention, and because he has little power of applying himself to the work of preparing lessons by himself. In the first three years the reading should be limited to pieces in the colloquial style, but selections from the classics of the language in prose and in poetry shall be read to the pupil from time to time, and discussions made of such features of the selections read as may interest the pupils. After the third year your committee believes that the reading lesson should be given to selections from classic authors of English, and that the work of the recitation should be divided between (a) the elocution, (b) the grammatical peculiarities of the language, including spelling, definitions, syntactical construction, punctuation, and figures of prosody, and (c) the literary contents, including the main and accessory ideas, the emotions painted, the deeds described, the devices of style to produce a strong impression on the reader. Your committee wishes to lay emphasis on the importance of the last item—that of literary study—which should consume more and more of the time of the recitation from grade to grade in the period from the fourth to the eighth year. In the fourth year and previously the first item—that of elocution, to secure distinct enunciation and correct pronunciation—should be most prominent. In the fifth and sixth years the second item—that of spelling, defining and punctuation—should predominate slightly over the other two items. In the years from the fifth to the eighth there should be some reading of entire stories, such as *Gulliver's Travels*, *Robinson Crusoe*, *Rip Van Winkle*, *The Lady of the Lake*, *Hiawatha*, and similar stories adapted in style and subject-matter to the capacity of the pupils. An hour should be devoted each week to conversations on the salient points of the story, its literary and ethical bearings.

Your committee agrees in the opinion that in teaching language care should be taken that the pupil practices much in writing exercises and original compositions. At first the pupil will use only his colloquial vocabulary, but as he gains command of the technical vocabularies of geography, arithmetic and history, and learns the higher literary vocabulary of his language, he will extend his use of words accordingly. Daily from the first year the child will prepare some lesson or portion of a lesson in writing. Your committee has included under the head of oral grammar (from the first to the middle of the fifth year) one phase of this written work devoted to the study of the literary form and the technicalities of composition in such exercises as letter writing, written reviews of the several branches studied, reports of the oral lessons in natural science and history, paraphrases of the poems and prose literature of the readers, and finally compositions or written essays on suitable

themes assigned by the teacher, but selected from the fields of knowledge studied in school. Care should be taken to criticise all paraphrases of poetry in respect to the good or bad taste shown in the choice of words; parodies should never be permitted.

It is thought by your committee that the old style of composition writing was too formal. It was kept too far away from the other work of the pupil. Instead of giving a written account of what he had learned in arithmetic, geography, grammar, history and natural science, the pupil attempted artificial descriptions and reflections on such subjects as "Spring," "Happiness" "Perseverance," "Friendship," or something else outside of the line of his school studies.

Your committee has already expressed its opinion that a good English style is not to be acquired by the study of grammar so much as by familiarity with great masterpieces of literature. We especially recommend that pupils who have taken up the fourth and fifth readers, containing the selections from great authors, should often be required to make written paraphrases of prose or poetic models of style, using their own vocabulary to express the thoughts so far as possible, and borrowing the *recherche* words and phrases of the author, where their own resources fail them. In this way the pupil learns to see what the great author has done to enrich the language and to furnish adequate means of expression for what could not be presented in words before, or at least not in so happy a manner.

Your committee believes that every recitation is, in one aspect of it, an attempt to express the thoughts and information of the lesson in the pupil's own words, and thus an initial exercise in composition. The regular weekly written review of the important topics in the several branches studied is a more elaborate exercise in composition, the pupil endeavoring to collect what he knows and to state it systematically and in proper language. The punctuation, spelling, syntax, penmanship, choice of words, and style, should not, it is true, be made a matter of criticism in connection with the other lessons, but only in the language lessons proper. But the pupil will learn language, all the same, by the written and oral recitations. The oral grammar lessons, from the first year to the middle of the fifth year, should deal chiefly with the use of language, gradually introducing the grammatical technique as it is needed to describe accurately the correct forms and the usages violated.

Your committee believes that there is some danger of wasting the time of the pupil in these oral and written language lessons in the first four years by confining the work of the pupil to the expression of ordinary commonplace ideas not related to the subjects of his other lessons, especially when the expression is confined to colloquial vocabulary. Such training has been severely and justly condemned as teaching what is called prating or gabbling, rather than a noble use of English speech. It is clear that the pupil should have a dignified and

worthly subject of composition, and what is so good for his purpose as the themes he has tried to master in his regular lessons? The reading lessons will give matter for literary style, the geography for a scientific style and the arithmetic for a business style; for all styles should be learned.

Your committee recommends that selected lists of words difficult to spell be made from the reading lessons and mastered by frequent writing and oral spelling during the fourth, fifth and sixth years.

Your committee recommends that the use of a text-book in grammar begin with the second half of the fifth year, and continue until the beginning of the study of Latin in the eighth grade, and that one daily lesson of twenty-five or thirty minutes be devoted to it.

For Latin we recommend one daily lesson of thirty minutes for the eighth year. For arithmetic we recommend number work from the first year to the eighth, one lesson each day, but the use of the text-book in number should not, in our opinion, begin until the first quarter of the third year. We recommend that the applications of elementary algebra to arithmetic, as hereinbefore explained, be substituted for pure arithmetic in the seventh and eighth years, a daily lesson being given.

Your committee recommends that penmanship as a separate branch be taught in the first six years at least three lessons per week.

Geography, in the opinion of your committee, should begin with oral lessons in the second year, and with a text-book in the third quarter of the third year and be continued to the close of the sixth year with one lesson each day, and in the seventh and eighth years with three lessons per week.

History of the United States, with the use of a text-book, your committee recommends for the seventh and first half of the eighth year, one lesson each day; the Constitution of the United States for the third quarter of the eighth year.

The following schedule will show the number of lessons per week for each quarter of each year:

Reading—Eight years, with daily lessons.

Penmanship—Six years, ten lessons per week for first two years, five for third and fourth, and three for fifth and sixth.

Spelling Lists—Fourth, fifth and sixth years, four lessons per week.

Grammar—Oral, with composition or dictation, first year to middle of fifth year, text-book from middle of fifth year to close of seventh year, five lessons per week. (Composition writing should be included under this head. But the written examinations on the several branches should be counted under the head of composition work.)

Latin or French or German—Eighth year, five lessons per week.

Arithmetic—Oral first and second year, text-book third to sixth year, five lessons per week.

Algebra—Seventh and eighth years, five lessons per week.

Geography—Oral lessons second year to middle of third year, text-book from middle of third year, five lessons weekly to seventh year, and three lessons to close of eighth.

Natural Science and Hygiene—Sixty minutes per week, eight years.

History of United States—Five hours per week seventh year and first half of eighth year.

Constitution of United States—Third quarter in the eighth year.

General History and Biography—Oral lessons, sixty minutes a week, eight years.

Physical Culture—Sixty minutes a week, eight years.

Vocal Music—Sixty minutes a week, eight years.

Drawing—Sixty minutes a week, eight years.

Manual Training, Sewing and Cooking—One-half day each week in seventh and eighth years.

Your committee recommends recitations of fifteen minutes in length in the first and second years, of twenty minutes in length in the third and fourth years, of twenty-five minutes in the fifth and sixth years, and of thirty minutes in the seventh and eighth.

The results of this programme show for the first and second years twenty lessons a week of fifteen minutes each, besides seven other exercises occupying an average of twelve minutes apiece each day; the total amount of time occupied in the continuous attention of the recitation or class exercises being twelve hours, or an average of two hours and twenty-four minutes per day.

For the third year twenty lessons a week of twenty minutes each, and five general exercises taking up five hours a week, or an average of one hour per day, giving an average time per day of two hours and twenty minutes for class recitations or exercises.

In the fourth the recitations increase to twenty-four (by reason of four extra lessons in spelling) and the time occupied in recitations and exercises to thirteen hours and an average per day of two hours thirty-six minutes.

| BRANCHES. | 1st year | 2d year | 3d year | 4th year | 5th year | 6th year | 7th year | 8th year |
|--|--|-----------------------|----------------------------------|------------------------|---------------------------------|------------------------|-------------------------|------------------------|
| Reading ... | 10 lessons a week | | 5 lessons a week | | | | | |
| Writing.... | 10 lessons a week | | 5 lessons a week | | 3 lessons a week | | | |
| Spelling lists | | | | 4 lessons a week | | | | |
| English Grammar | Oral, with composition lessons | | | | 5 lessons a week with text-book | | | |
| Latin..... | | | | | | | | 5 lessons |
| Arithmetic. | Oral, 60 min- utes a week | | 5 lessons a week with text-book | | | | | |
| Algebra.... | | | | | | | 5 lessons a week | |
| Geography. | Oral, 60 minutes a week | | *5 lessons a week with text-book | | | | 3 lessons a week | |
| Natural Science +Hygiene | Sixty minutes a week | | | | | | | |
| U. S. His- tory | | | | | | | 5 lessons a week | |
| U. S. Con- stitution | | | | | | | | *5- ls |
| General History | Oral, 60 minutes a week | | | | | | | |
| Physical Culture | Sixty minutes a week | | | | | | | |
| Vocal Music | Sixty minutes a week divided into four lessons | | | | | | | |
| Drawing... | Sixty minutes a week | | | | | | | |
| Man'l Train. or Sewing + Cookery | | | | | | | One-half day each week | |
| Number of Lessons | 20+7 daily exer. | 20+7 daily exer | 20+5 daily exer. | 24+5 daily exer. | 27+5 daily exer. | 27+5 daily exer. | 23+6 daily exer.† | 23+6 daily exer. |
| Total Hours Recitations | 12 | 12 | 11½ | 13 | 16½ | 16½ | 17½ | 17½ |
| Length of Recitations | 15 min | 15 min | 20 min | 20 min | 25 min | 25 min | 30 min | 30 min |

*Begins in second half year.

In the fifth and sixth years the number of recitations increases to twenty-seven per week, owing to the addition of formal grammar, and the total number of hours required for all is $16\frac{1}{4}$ per week, or an average of $3\frac{1}{4}$ per day.

In the seventh and eighth years the number of lessons decreases to twenty-three, history being added, penmanship and special lessons in spelling discontinued, the time devoted to geography reduced to three lessons a week. But the recitation is increased to thirty minutes in length. Manual training occupies a half-day, or $2\frac{1}{2}$ hours, each week. The total is 19 hours per week, or $3\frac{3}{4}$ per day.

The foregoing tabular exhibit shows all of these particulars.

IV. METHODS AND ORGANIZATION.

Your committee is agreed that the time devoted to the elementary school work should not be reduced from eight years, but they have recommended, as hereinbefore stated, that in the seventh and eighth years a modified form of algebra be introduced in place of advanced arithmetic, and that in the eighth year English grammar yield place to Latin. This makes, in their opinion, a proper transition to the studies of the secondary school and is calculated to assist the pupil materially in his preparation for that work. Hitherto, the change from the work of the elementary school has been too abrupt, the pupil beginning three formal studies at once—namely, algebra, physical geography and Latin.

Your committee has found it necessary to discuss the question of methods of teaching in numerous instances, while considering the question of educational values and programmes, because the value and time of beginning of the several branches depend so largely on the method of teaching.

The following recommendations, however, remain for this part of their report:

They would recommend that the specialization of teachers' work should not be attempted before the seventh or eighth year of the elementary school and in not more than one or two studies then. In the secondary school it is expected that a teacher will teach one or, at most, two branches. In the elementary school, for at least six years, it is better, on the whole, to have each teacher instruct his pupils in all the branches that they study, for the reason that only in this way can he hold an even pressure on the requirements of work, correlating it in such a manner that no one study absorbs undue attention. In this way the pupils prepare all their lessons under the direct supervision of the same teacher, and by their recitations show what defects of methods of study there have been in the preparation.

The ethical training is much more successful under this plan, because the personal influence of a teacher is much greater when he or she

knows minutely the entire scope of the school work. In the case of the special teacher the responsibility is divided and the opportunities of special acquaintance with character and habits diminished.

With one teacher, who supervises the study and hears all the recitations, that there is a much better opportunity to cultivate the two kinds of attention. The teacher divides his pupils into two classes and hears one recite while the other class prepares for the next lesson. The pupils reciting are required to pay strict attention to the one of their number who is explaining the point assigned him by the teacher—they are to be on the alert to notice any mistakes of statement or omissions of important data, they are at the same time to pay close attention to the remarks of the teacher. This is one kind of attention, which may be called associated critical attention. The pupils engaged in the preparation of the next lesson are busy, each one by himself, studying the book and mastering its facts and ideas, and comparing them one with another, and making the effort to become oblivious of their fellow-pupils, the recitation going on, and the teacher. This is another kind of attention, which is not associated, but an individual effort to master for one's self without aid a prescribed task and to resist all distracting influences. These two disciplines in attention are the best formal training that the school affords.

Your committee has already mentioned a species of faulty correlation wherein the attempt is made to study all branches in each, misapplying Jacotot's maxim, "all is in all" (*tout est dans tout*).

A frequent error of this kind is the practice of making every recitation a language lesson, and interrupting the arithmetic, geography, history, literature, or whatever it may be, by calling the pupil's attention abruptly to something in his forms of expression, his pronunciation, or to some faulty use of English; thus turning the entire system of school work into a series of grammar exercises and weakening the power of continuous thought on the objective contents of the several branches, by creating a pernicious habit of self-consciousness in the matter of verbal expression. While your committee would not venture to say that there should not be some degree of attention to the verbal expression in all lessons, it is of the opinion that it should be limited to criticism of the recitation for its want of technical accuracy. The technical words in each branch should be discussed until the pupil is familiar with their full force. The faulty English should be criticized as showing confusion of thought or memory, and should be corrected in this sense. But solecisms of speech should be silently noted by the teacher for discussion in the regular language lesson.

The question of promotion of pupils has occupied from time to time very much attention. Your committee believes that in many systems of elementary schools there is injury done by too much formality in ascertaining whether the pupils of a given class have completed the

work up to a given arbitrarily fixed point, and are ready to take up the next apportionment of the work. In the early days of city school systems, when the office of Superintendent was first created, it was thought necessary to divide up the graded course of study into years of work, and to hold stated annual examinations to ascertain how many pupils could be promoted to the next grade or year's work. All that failed at this examination were set back at the beginning of the year's work to spend another year in reviewing it. This was to meet the convenience of the Superintendent, who, it was said, could not hold examinations to suit the wants of individuals or particular classes. From this arrangement there naturally resulted a great deal of what is called "marking time." Pupils who had nearly completed the work of the year were placed with pupils who had been till now a year's interval below them. Discouragement and demoralization at the thought of taking up again a course of lessons learned once before caused many pupils to leave school prematurely.

This evil has been remedied in nearly one-half of the cities by promoting pupils whenever they have completed the work of a grade. The constant tendency of classification to become imperfect by reason of the difference in rates of advancement of the several pupils owing to disparity in ages, degree of maturity, temperament and health, makes frequent reclassification necessary. This is easily accomplished by promoting the few pupils who distance the majority of their classmates into the next class above, separated as it is, or ought to be, by an interval of less than half a year. The bright pupils thus promoted have to struggle to make up the ground covered in the interval between the two classes, but they are nearly always able to accomplish this, and generally will in two years' time need another promotion from class to class.

The procrustean character of the old city systems has been removed by this device.

There remain for mention some other evils besides bad systems of promotion due to defects of organization. The school buildings are often with superstitious care kept apart exclusively for particular grades of pupils. The central building erected for high school purposes, though only half filled, is not made to relieve the neighboring grammar school, crowded to such a degree that it cannot receive the classes which ought to be promoted from the primary schools. It has happened in such cases that this superstition prevailed so far that the pupils in the primary school building were kept at work on studies already finished, because they could not be transferred to the grammar school.

In all good school systems the pupils take up new work when they have completed the old, and the bright pupils are transferred to higher classes when they have so far distanced their fellows that the amount of work fixed for the average ability of the class does not give them enough to do.

In conclusion, your committee would state, by way of explanation, that it has been led into many digressions, in illustrating the details of its recommendations in this report, through its desire to make clear the grounds on which it has based its conclusions and through the hope that such details will call out a still more thorough-going discussion of the educational values of branches proposed for elementary schools, and of the methods by which those branches may be successfully taught.

With a view to increase the interest in this subject, your committee recommends the publication of selected passages from the papers sent in by invited auxiliary committees and by volunteers, many of these containing valuable suggestions not mentioned in this report.

EXCEPTION BY SUPERINTENDENT OF KANSAS CITY.

Arithmetic.

1. As to Fractions—In teaching arithmetic there does not exist any greater difficulty in getting small children to grasp the nature of the fraction as such than in getting them to grasp the idea of the simpler whole numbers. It is true that the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc., as symbols, are a little more complex than are the single digits; but as to the real meaning, when once the fractional idea has been properly developed by the teacher and the significance of the idea apprehended by the pupil, it is as easily understood as any other simple truth. Children get the idea of half, third or quarter of many things long before they enter school, and they will as readily learn to add, subtract, multiply and divide fractions as they will whole numbers. In using fractions they will draw diagrams and pictures presenting the process of work as quickly and easily as they illustrate similar work with integers. It is of course assumed that the teacher knows how to teach arithmetic to children, or rather, how to teach the children how to teach themselves. There is really no valid argument why children in the second, third and fourth years in school should not master the fundamental operations in fractions. Not only this, they will put the more common fractions into the technique of percentage, and do this as well in the second and third grades as at any other time in their future progress. There is only one new idea involved in his operation, and that consists in giving an additional term—per cent—to the fractional symbol. When one number is a part of another, it may be regarded as a fractional part or as such a per cent of it. A great deal of percentage is thus learned by the pupils early in the course. Children are not hurt by learning. Standing still and lost motion kill.

Every recitation should reach the full swing of the learner's mind, including all his acquisitions on any given topic. But if the teaching

of fractions be deferred, as it usually is in most schools, the time may be materially shortened by teaching addition and subtraction of fractions together. This is simple enough if different fractions having common denominators are used at first, such as $6-2$ plus $5-2 = ?$, and $6-2 - 5-2 = ?$ Then the next step, after sufficient drill on this case, is to take two fractions (simple) of different units of value, as $\frac{1}{2}$ plus $\frac{1}{3} = ?$, and $\frac{1}{2} - \frac{1}{3} = ?$ Multiplication and division may be treated similarly.

In decimals, the pupil is really confronted by a simpler form of fractions than the varied forms of common fractions.

Devices and illustrations of a material kind are necessary to build up in the pupil's mind at the beginning a clear concept of a tenth, etc., etc., and then to show the one-tenth written as a decimal is only a shorthand way of writing $\frac{1}{10}$ as a common fraction, and so on. He sees very soon that the decimal is only a shorthand common fraction, and this notion he must hold to. This is the vital point in decimals. The idea that they can be changed into common fractions and the reverse at will, establishes the fact in the pupil's mind that they are common fractions, and not uncommon ones. Fixing the decimal point will, in a short time, take care of itself.

In teaching arithmetic the steps are: (1) developing the subject till each pupil gets a clear conception of it; (2) necessary drill to fix the process; (3) connecting the subject with all that has preceded it; (4) its application; (5) the pupil's ability to sum up clearly and concisely what he has learned.

2. As to Abridgment—Under this head I hold that a course in arithmetic, including simple numbers, fractions, tables of weights and measures, percentage and interest, and numerical operations in powers, does not fit a student to begin the study of algebra. That while he may carry the book under his arm to the school room, he is too poorly equipped to make headway on this subject, and instead of finishing up algebra in a reasonable length of time, he is kept too long at it, with a strong probability of his becoming disgusted with it.

There are subjects, however, in the common school arithmetic that may be dropped out with great advantage, to wit, all but the simplest exercises in compound interest, foreign exchange, all foreign moneys (except reference tables of values), annuities, alligation, progression; and the entire subjects of percentage and interest should be condensed into about twenty pages.

Cancellation, factoring, proportion, evolution and involution should be retained. Cancellation and factoring should be strongly emphasized, owing to their immense value in shortening work in arithmetic, algebra and in more advanced subjects. Some drill in the metric system should not be omitted.

3. As to Mental Arithmetic—Till the end of the fourth year the

pupil does not need a text-book of mental arithmetic. So far his work in arithmetic should be about equally divided between written and mental. At the beginning of the fifth year, in addition to his written arithmetic, he should begin a mental arithmetic and continue it three years, reciting at least four mental arithmetic lessons each week. The length of the recitation should be twenty minutes. A pupil well drilled in mental arithmetic at the end of the seventh year, if the school age begins at six, is far better better prepared to study algebra than the one who has not had such a drill. There are a few problems in arithmetic that can be solved more easily by algebra than by the ordinary process of arithmetic, but there are many numerical problems in equations of the first degree that can be more easily handled by mental arithmetic than by algebra. To attack arithmetical problems by algebra is very much like using a tremendous lever to lift a feather. Those who have found a great stumbling-block in arithmetical "conundrums" have, if the inside facts were known, been looking in the wrong direction. A deficiency of "number-brain-cells" will afford an adequate explanation.

4. Re-arrangement of Subjects—There should be a re-arrangement of the topics in arithmetic, so that one subject naturally leads up to the next. As an illustration, it is easily seen that whole numbers and fractions can be treated together, and that with United States money, when the dime is reached, is the proper time to begin decimals, and that when "a square" in surface measure first comes up, the next step is the square of a number as well as its square root, and that solid measure logically lands the learner among cubes and cube roots. When he learns that 1728 cubic inches make one cubic foot, he is prepared to find the edge of the cube. What is meant here is pointing the way to the next above. All depends upon the teacher's ability to lead the pupil to see conditions and relations. My contention is that truth, so far as one is capable of taking hold of it when it is properly presented, is always a simple affair.

5. As to Algebra—If algebra be commenced at the middle of the seventh year, let the pupil go at it in earnest, and keep at it till he has mastered it. Here the best opportunities will be afforded him to connect his algebraic knowledge to his arithmetical knowledge. He builds the one on top of the other. The skillful teacher always insists that the learner shall establish and maintain this relationship between the two subjects. To switch around the other way appears to me to be the same as to omit certain exercises in the common algebra, because they are more briefly and elegantly treated in the calculus. It is admitted that a higher branch of mathematics often throws much light on the lower branches, but these sidelights should be employed for the purpose of leading the learner onward to broader generalizations. Unless one sees the lower clearly, the higher is obscure. Build solidly the foundation on arithmetic—written and mental—and the higher branches will be more easily mastered and time saved.

Principals.

The Principal of a school should be in character and manners all that the highest ideal would require. While the influence of a teacher reaches her own class directly, and the whole school indirectly, the influence of the Principal has a direct bearing upon the pupils and teachers of his own school, and an indirect one upon those in every other school. A Principal should be an intelligent, high-minded teacher and helper of teachers and pupils. He should be a constant, careful, sympathetic critic of his assistants' work. He should study to know the strong as well as the weak points of his teachers, and be ready to appreciate the one and suggest remedies for the other. To be a report clerk for a school is a small part of a Principal's duty. To *fill* the office of Principal of a large school requires more all-around tact and skill than to manage a large business house or a bank. He should be a student in the broadest sense of the term. His personality should be broad, deep, and, in its influence, far-reaching. He should be as careful in the selection of his tailor as in the selection of his language. He should be intelligent with regard to all that is best in management, and strictly honest in the expression of his educational theories. An educational demagogue is the worst of all demagogues.

Teachers.

No one is fit to fill the high office of teacher who is not a refined, cultured, energetic, enthusiastic, polite, sympathetic man or woman. A schoolroom is no place for any but the highest type that can be placed before young people to copy.

The position of honor.

As so much depends on a right start in school work, too great care cannot be exercised in the selection of teachers for these lower grades. New teachers should never be placed here to experiment; but successful experience and superior merit should be considered necessary qualifications of a teacher for the lower primaries. Then let the ambition of these teachers be not to take higher-grade classes, but to perfect themselves as primary teachers. There is no more honorable position.

A. W. EDSON.

Examining Boards.

It requires men of great and versatile experience to be able to ask such suggestive questions as can fully test the general knowledge on particular points; but Examining Boards have, or should have, a far more difficult duty to perform, and hence should be composed of professional teachers only. Who would think of building a ship and ask-

ing a doctor to examine it to see if it was seaworthy? But you can build your schools, send your children there, and then get men who have not been in school in forty years, and know nothing of modern methods and regime, to go and examine the teachers, simply because some of these men once attended a college. The absurdity of this foolish system is only too evident. The Examining Board should consist of teachers of the highest ability and success.

J. W. CORTHELL.

Tests of success.

The tests of success in practice-teaching are in the main those to be applied to all teaching. Do her pupils grow more honest, industrious, polite? Do they admire their teacher? Does she secure obedience and industry only while demanding it, or has she influence that reaches beyond her presence? Do her pupils think well and talk well? As to the teacher herself, has she sympathy and tact, self-reliance and originality, breadth and intensity? Is she systematic, direct and business-like? Is she courteous, neat in person and in work? Has she discernment of character and a just standard of requirement and attainments?

These are some of the questions one must answer before he pronounces any teacher a success or a failure.

COMMITTEE OF FIFTEEN.

EVENING SCHOOLS.

There is no part of a school system that requires as much wisdom in management as do evening schools. A boy or a girl who toils during the day and devotes his evenings to obtaining an education, should not have to wait for novices in teaching to gain experience.

My sympathy for struggling young medical, law and other students, is only surpassed by the sympathy I feel for those who, if they get an education, do so at the end of a hard day's work. To teach such boys and girls, no less than skilled teachers should be employed.

SELECTION OF TEACHERS FOR EVENING SCHOOLS.

The Board has done another good thing in rescinding the rule forbidding the appointment of day teachers to positions in evening school. To be sure, they have in but two or three instances, and then only to

special classes, elected day teachers. But they have done wisely in making it possible to select from the large body of tried and successful instructors to be found in the day schools.

In 1879 I made the following remarks, in my "Evening School Report," on the "appointment of teachers": * * * "As the real object of school teaching is the proper instruction and intellectual development of the scholars, one would imagine that it is the clear duty of Directors to employ the *best* teachers they can find for the salary allowed. * * The supply of able and energetic male teachers in California is at least not greater than the demand. Hence, good male teachers cannot long remain unemployed in the daytime. If it is unfair to retain teachers in night schools who are employed during the day, then all who obtain work in the daytime should immediately be dismissed from night school. A pretty night school we should have if such were the policy of the Board of Education, and fine teachers, truly, they would be who would rest satisfied with a maximum salary of fifty dollars per month! Occasionally, a deserving teacher is to be found who is not employed during the day, but the great majority of this class are out of position, either because they lack ability, or having it, are nomads who are constitutionally unable to remain long in one place."

Every word of the foregoing has since been proved prophetic, by actual experience. A Board of Education did decide that "No teacher employed in the day schools shall be eligible to a position in the evening schools." This decision was reached, *ostensibly*, for two reasons: 1st, that those employed in the day schools had salary enough; 2d, that the labor of teaching during the day would render instructors unequal to the task of working two hours additional at night. The real reason was, as I heard Directors openly avow, that the Evening School Committee might have more *patronage*, whatever the inner meaning of that may be. No one even pretended to consider the welfare of the students. Now, how did the enforcement of this rule result? In the appointment of a number of gentlemen who were students of law and medicine and of the University—persons whose mental strain was much greater than that of the ordinary day school teacher; in the selection of special teachers of book-keeping, who kept books from 8 o'clock in the morning until 5 or 6 in the afternoon, thereby obtaining a much greater salary than the average teacher; of drawing, who were busy all day long at lithographing, or in the drawing room of a machine shop; of languages, one a physician, the others employed giving private lessons all day long; in the selection of a large corps of young ladies, many of whom had never taught before, but were elected to evening school simply because, although they had some influence, they had not sufficient to obtain positions in day schools. For the purpose of extending the *patronage*, and, as usual, with entire disregard of the welfare of the students, another rule was passed, stating that "the appointment of no

evening school teacher shall be made for a longer period of time than one school term " of half a year. It is to the great credit of the present Board that they reappointed the present competent teachers they found in charge, and that they rescinded both the rules referred to.

Thus it will be seen that the persons elected under the rules referred to were generally not teachers at all, and, when employed during the day, were in receipt of larger salaries than our day school teachers; that of those not earning during the day, the men (boys, in some instances) were either: 1st, University students, who knew nothing whatever of teaching; who had to leave their beds very early in order to breakfast and reach Berkeley in time; then to rush from the University to their homes, dine, rush to school, learn to teach at the expense of the pupils, until nine o'clock, and then go home to study their lessons for the next day; or, 2d, students of law and medicine, giving almost their entire attention to these subjects. The latter did somewhat better than the University men; but, in most cases, neither of them knew anything about teaching.

Among the ladies there were several very good teachers, who had previously left the profession, but were forced by circumstances to return to it. They, their previous success and efficiency being well known, should have been appointed to the first vacancies of the day schools. The "patronage" system, however, prevented this. In the night schools they became the very best teachers—of children. Illiterate men, who should have the first claims on this forlorn hope of education, never would, and never will, attend classes taught by young ladies.

I will here introduce two recommendations made to the Board in my report for 1879:

"1. Let the night classes have the best teachers obtainable for the positions. Let those teachers be tested by the order, progress and regular attendance of their pupils."

"4. Let all the teachers not discharged before or at the close of school, be considered in charge of their classes at the re-opening."

I would add:

For the sake of the illiterate men of our city who desire to have at least the rudiments of an education, elect the very best day school male teachers who will serve (and they are not many), to positions in evening schools. And:

For the sake of illiterate women, appoint the very best female teachers of the Department to take charge of adult female classes in the evening schools.

The patronage plan has procured, and always must procure, instructors whose teaching ability is at par with the recklessness or want of judgment of the Directors who appoint them. The double salary cry is the rankest demagoguism. Where is the physician who does not charge in addition to his other earnings for professional services rendered by

night, or the lawyer who does not charge for the preparation of his briefs in the evening as well as for his services in court during the day? Who is the doctor or lawyer employed by the city at a fixed salary that is not at the same time drawing multiple salary from his numerous clients? Is it wrong for a newspaper publisher to employ a person in the evening who has especial ability as a journalist, because he happens to be similarly engaged during the day? Formerly the objection to double positions was that the work could not be well done, either because the duties did not come in succession or were too exhaustive. No one then proposed to have work poorly done in order to spread "patronage" or prevent the most capable from receiving additional pay for additional labor. Until the demagogues of a few years back raised the cry of double salary, and their nominees in the School Board used it to increase their "patronage," the leading evening school teachers were always taken from the day schools.—JOSEPH O'CONNOR, in Deputy Superintendent's Report, 1884.

The evening grammar schools are holding steadfastly to the three Rs. In the two hours which we have for instruction in these schools each evening we find time for nothing else.—SUPERINTENDENT LANE, in Chicago Report.

CRITICS OF THE SCHOOLS.

The San Francisco schools receive comparatively little harsh criticism when we consider the fact that every day the schools average nearly thirty-three thousand pupils, and the farther fact that every American citizen, good, bad, or indifferent, knows how to teach. The most surprising thing in my official experience is the cold-blooded assurance with which some (very few) people pass upon the efficiency of the schools.

The Press of San Francisco, as a rule, is very gracious to the schools. It is only when some educational dyspeptic gets the editorial ear that the newspapers are made a medium of unfair criticism.

TEACHERS' SALARIES.

Higher salaries are now desired by all teachers. This is not because they want a larger share of the public moneys, but because teachers must have more money to meet the calls upon them. They must read professionally, they must read for culture, they must read for information. They must have educational journals, literary magazines, and

books. They must belong to associations, they must travel, they must entertain.

There is no member of society of whom there is so much required by the progress of the day as of the teacher whose salary is relatively the least. This will be changed when the public discriminates between the teacher who has all these advantages and the one who has them not.

Every agency and means that helps the promotion of every teacher who is progressive in the highest sense, whether it be in her own city or by transference to another place, helps forward the cause of educational progress.—A. E. WINSHIP, Editor *American Teacher*.

UNPROFITABLE CHILD STUDY.

The interested observer is very much in doubt, oftentimes, whether the designating of the study of the children as a separate and distinct study for the teacher is of any real service to educational reform. One danger is to be apprehended from a longing desire of certain child-study advocates to be the apostles of a new educational dispensation. They propound an elaborate scheme for studying children with records and reports classified under numerous heads, in which crude and uncertain physical measurements seem to have a prominent part. It is easy to stimulate the emotions of emotional people by talking to them in a tear-stained voice of some case of "born short," or unfortunately born and bred human humanity, and to marshal all the misfortunes that arise from natural defects or bad environments so as to point to child study as the panacea of most of the ills in our present civilization. Of the importance of an intelligent and sympathetic observation of the strength and weakness of individual children, with a view of giving to their school instruction that ingredient that will be most nutritious and stimulating, no intelligent teacher doubts, or has ever doubted. A more rational psychology is helping teachers to make these observations more intelligently and effectively than the teachers of former generations were able to do. But the good teachers have always recognized the born-short misfortunes of children in both body and mind, and have used all the knowledge they possessed in trying to alleviate their misfortunes. They had for years very wrong notions of psychology, and would keep the child who could not learn mathematics, for example, at work trying to learn it, because it was believed that every child was capable of the same development, if the teacher only persisted. Good teachers, we repeat, have been studying children in a proper and effective manner for a good many years. Dr. Arnold of Rugby is a notable example, at whose feet our worthiest child-study apostles might sit for many years with profit. Such child study as he pursued we need to

pursue to-day, in the light of the greater knowledge of the mind that his study, and such as his, have helped to reveal.

The Journal has welcomed with cordial approval the new apostles of the old doctrine that teachers must become acquainted with their pupils before they can teach them well. The schools have lost sight of this, in a measure, in the period of mechanical organization in which most of the younger advocates of child study were born. It is a great credit to them that have seen this error and have set so vigorously to work to correct it. But it is time to urge a halt when half-fledged physiological psychologists are attempting to set the common-school teachers to pursuing methods of study that are as yet of very uncertain value. Let us encourage the teacher to put himself in the place of the child to the fullest extent possible in all his work of instruction. This is the kind of child study that all can appreciate and that will ever be effective, as it ever has been. The Journal has often said, and again repeats, that the demand of the present time is that the teacher shall leave his course of study and the mechanism of the school organization as his point of view, and shall take his stand close beside the child—becoming the little child so far as that is possible—and make such use of the studies, and of everything else, as will best promote the natural growth of that child. This does not require that every teacher shall follow the directions of a physiological psychologist and begin to measure heads, and legs, and arms, and limit his pedagogical reading to a child-study magazine of this sort. On the contrary, this is what the mass of the teachers ought not to do. Let the physiological professors at the universities experiment, and weigh, and consider, and discover, and give the teacher the results when they are right sure they have found out anything that is so which will help along. But may the good Lord preserve us from a mass of physiological experimenters who have not yet reached the pin-feather stage of scientific knowledge and method, and whose best leaders do not hesitate to admit that the way is yet unsurveyed which shall make this sort of child study practical in the common school.

Children must be observed and studied as they reveal themselves in the every-day work of the school. All the teacher can know of what is already *known* will help her to observe more effectively.—[Public School Journal, Bloomington, Ill.]

SCRAPS.

Education is ability to do.

Telling is not teaching.

The silent influence of the teacher has more to do with the future of the child than all other school influences beside.

Who ever saw a lazy child when left to himself?

As a rule, pupils that enter the receiving classes are good-natured and wide-awake. Where do they become stupid? What is the cause?

Of all the ornaments of a school, an office principal is of least value.

A good principal, like a good general, is one who goes ahead and says come.

The class teacher who looks forward to a principalship with longing for a place of rest and ease is mistaken in the office to which he aspires. No position is so responsible and none so busy as that of the principal of a school.

No shrewder class of women walk the soil of the United States than are the women who teach school. Their life work sharpens their observation and leads them to accurate conclusions respecting men and things.

The State should add another branch to the subjects upon which teachers should be examined. The time has come when no more boors should be given a passport, through scholarship, to a schoolroom. One of the essentials of modern education is polite behavior.

The child's education is shaped by the first two years of his school life. Hence the wisdom of the law that requires experienced teachers in receiving classes and first grades.

A good schoolroom motto is: "If you have nothing good to say of another, say nothing."

The school that fails to make honorable, upright boys and girls fails in its most important office.

A well-trained voice is the most powerful factor in the control of children.

Boys and girls respect and try to please a real lady or gentleman.

Why do you scold? Who likes to be scolded?

The true teacher seeks for means to develop the child as she finds him, instead of trying to discover excuses for his condition.

"Have the self-command you wish to inspire."

Teach them (children) to hold their tongues by holding your own. Say little; do not snarl; do not chide; but govern by the eye.—Emerson.

"Teachers should be living examples of courage and bravery. Nothing is so much to be feared as fear."

Personal presence next to personal worth is the keynote to success in the schoolroom.

I believe that our own experience instructs us that the secret of education lies in respecting the pupil.—Emerson.

Appropriate, well-fitting clothes are as important to a teacher as good manners or well-selected, refined language.

Everything that is done in the schoolroom and in the home should have for its end and aim the formation of intelligent, high-minded, courageous, honorable American citizenship.

Teachers as a class suffer from want of physical exercise and lack of pure air in the schoolroom.

No school can be larger than its principal, and no class larger than its teacher.

The principal who fails to draw around him in sympathetic accord his teachers, fails in one of the most important factors of his office.

AS IT SHOULD BE.—The New York State Board of Education have dropped spelling as such from the State examinations, and give candidates credit for spelling their own words. What can be more utterly nonsensical than to say a teacher or a pupil is a poor or a good speller as he may miss or spell correctly a selected list of words? A good speller is a person who spells correctly the words he uses in writing.

"HOW LONG! OH, HOW LONG!"—"How long, oh, how long" before teachers and others will learn that correct teaching demands correct models in language as in other things. Away

with so-called false syntax, and give the children the best models of English to study.

WHY NOT?—Encourage pupils to ask for the Dictionary when in any written exercise they know that they do not know to spell a word. Spelling at words is as often an exercise in misspelling as in spelling.

The most useless of all things about a modern school is a slipshod, careless, slouchy teacher, man or woman.

Why is it the typical college student has his hands in his pockets?

Improper light, impure air, and bad teaching have made more children dull than were ever born so.

Theodore Thomas said that his most valuable players were hardest to control.

Teachers who are ready to criticise mothers and fathers should remember that they, too, are the product of the schools.

A teacher should be as careful to use refined language in the presence of her class as she would in the presence of a queen.

Have you noticed with what composure the cab-horse waits for a job, and the restlessness of the almost unmanageable thoroughbred, when he lines up for a race? Is there any doubt which is made of the best stuff?

Children take delight in a neat, tidy schoolroom.

What other living picture can compare with a class of fifty wide-awake, inquiring, happy children, in charge of a neat, tidy, even-tempered, courteous, high-minded teacher?

Beware how you stamp any child as dull, for he may, under your own good teaching, give the lie to your conclusion.

A school is no place for ranking, for medals, for prizes, for anything that does not in its effect sharpen the ambition and the effort of every child.

The floors of a school house should be washed every month and the walls and ceilings kalsomined once a year.

"I am having a terrible time getting along with her," said a young girl, when asked how she liked her new teacher.

"Yes, they used to fight with me some," said a boy, when asked if he had trouble in his last school.

Who can measure the influence of a bow, a ribbon, a white apron, a cheery smile or a pleasant good morning?

"It's alive," said a boy, in an undertone, when a substitute who had not said good morning to the class began to take off her wrap.

There is no class of people who are bored as much by lecturers, in the profession and out of it, as are teachers. Not one lecturer in a dozen hits the mark once in a hundred times.

The most powerful influence for good in the schools of the country is a neatly dressed, wide-awake, sympathetic, progressive woman, whose intuitive insight into child nature makes her mistress of her art.

The "enrichers" of courses of study seem to think they have discovered something. The country schools of forty years ago taught algebra, geometry, and, in some cases, Latin, to children.

American schools are in most danger from the disciples of the various educational doctors, many of whom are, at the best, running on one wheel.

JOHN SWETT.

January 7th, 1895, Mr. Swett's term of office as Superintendent closed, and with it his connection with the schools of California. It falls to the lot of few men to serve the public as long and faithfully as has he. When the future historian shall write of San Francisco and those who have done most to build for its substantial growth and solid worth, let him give a foremost place to a record of the man who more than any other stood for all that was wisest and best in the education of her children. At Mount Auburn a huge granite boulder marks the resting-place of the great teacher Agassiz. In the public school system of California is a more lasting monument to the honor of its foremost, ablest teacher, John Swett.

On May the 30th, the teachers of San Francisco gave Mr. Swett a reception, at which time he was presented with a beautiful album containing the following address and contributions:

DEPARTMENT OF PUBLIC EDUCATION,
OFFICE OF SUPERINTENDENT, NEW CITY HALL,
SAN FRANCISCO, May 31, 1895.

To A. L. Mann, Esq., Chairman of Committee of Reception to Hon. John Swett—

DEAR SIR: I beg to acknowledge the receipt of your kind invitation to attend the reception to-night tendered to ex-Superintendent John Swett by the teachers of San Francisco.

Regretting my inability to be present, I cannot let the occasion pass without heartily endorsing this high compliment paid to him by those who knew him best. He has devoted his life to the cause of Education, and has left his impress upon the schools of the State and of San Francisco.

With singleness of purpose, high intelligence, zeal and industry, he has worked, for more than a generation, for the improvement of our school system. Its present efficiency is largely due to his efforts.

I am, very truly yours,

ANDREW J. MOULDER,
Superintendent of Schools.

*To the Hon. John Swett, ex-Superintendent Public Instruction,
ex-Superintendent Common Schools of San Francisco—*

DEAR COMRADE AND FRIEND: At a meeting of the Principals of the Public Schools of this City, held in January, 1895, it was unanimously agreed that a committee of seven should be chosen to draw resolutions expressive of the feelings of the public school teachers on the occasion of the completion of your recent term of service as City Superintendent, an event which marks a memorable halting place in a career whose unusual length and grand achievements render yours one of the greatest names in the educational history of California and of the United States.

A committee of seven, whose names are hereinafter subscribed, was accordingly appointed by the meeting itself.

As every one of this committee has been joined to you for many years by ties of professional and personal intimacy, we thought that this tribute of respect, affection and gratitude would, in the years to come, awaken in your mind a more vivid reminiscence, if each member should forge and polish his individual link of the golden chain.

To me has fallen the less conspicuous but no less pleasing duty of arranging and welding together the several offerings of my associates.

We do not forget, for a moment, however, our representative character and we ask you to look through and beyond us to the great body of teachers, whose appreciation of your brilliant efforts for the common school is far higher than our limited powers have been able to express.

A. L. M.

Teacher.

John Swett's work as a teacher has given him wide opportunity to exercise sympathy for those who must win an upward way through struggle, and his heart always went out to those children, old or young, who needed a chance to work out of dark shades into the light of higher intelligence.

It was this warm feeling of sympathy and brotherly love that endeared him to us all, and kept him ever on the watch to make education practical and far-reaching. In teaching, his aim was to clear away rubbish and non-essentials, that the light of common sense and reason might fall on every step of the student's path.

Mr. Swett's manner in the class-room was genial and ever full of devices for varying the monotony of school work. Nothing was too simple for him, if its effect was to arouse new interest or to relieve the tired brain; so that, while the highest pupils were kept stimulated, the poorest were not neglected.

These strongly marked traits of the teacher and of the man made a

profound impression upon the plastic minds under his charge. Thousands of grateful pupils who have been subject to his influence in the Evening, Grammar, High and Normal Schools, are, to-day, in their various walks of life, ready witnesses to his intellectual power and to his moral worth.

J. P.

State Superintendent.

Eastern educators often speak of Hon. John Swett as the "Horace Mann of California." If untiring industry, great breadth of view and close attention to details were characteristic of Mr. Mann, we know that Mr. Swett had similar traits, but a harder field in which to work. The people of New England had been wedded to church and school for generations before Horace Mann advocated institutes, normal schools and modern appliances. He built additions and improvements to a structure already reared, the foundations of which were laid by John Harvard in 1638.

John Swett worked for a cosmopolitan community, not devoted to either church or school, but devoted to such pursuits as would give them the greatest amount of gain in the shortest period of time. They did not come here to establish homes or schools, but to get gold and return to their old homes and enjoy it. The year 1863 was a bad time to lay a foundation for a system of free schools here. We were in the midst of a doubtful struggle for the maintenance of our national existence. This State was pouring a continuous stream of gold into the treasuries of the sanitary and Christian commissions. Never before had we been so poor; for a protracted drought had impoverished farmer and miner, and our generous gifts were the hoarded treasures of former years. Ten years of successful teaching in San Francisco had made Mr. Swett familiar with the needs of the State. He knew what legislation was demanded, and possessed the confidence of the legislative department and of the executive to such an extent that he seldom failed to get what he advocated. Among the important things accomplished were increased financial aid through State and county taxation, longer terms of schools, aid to county institutes, establishment of a State school journal, uniformity of school books, and the formation of a State Board for the issuing of State educational diplomas and first, second and third grade certificates. Personal inspection of schools and frequent State and county institutes with the addition of history, physiology, constitution and government of the United States to the course of study, imparted new life to our schools and increased the attendance of pupils 46 per cent. Over 200 new school houses were built. The school fund contained 91.7 per cent more money than during the preceding year. When I consider how meagre were the provisions for the support of public schools, how few months they were open previous to 1863, how able

but ill-paid teachers turned from that vocation to law or medicine, or, in fact, to any paying vocation, I cannot find suitable words in which to express my gratitude to Hon. John Swett for the revolution he produced in making the schools free and open for ten months in the year, for securing immunity from the "old time annual examinations," and, by his encouragement of normal schools, for providing the State with trained teachers. Also, by the establishment of State and County Boards and the issuance of life diplomas, he did much to foster professional spirit among teachers.

Lastly, from short-lived summer schools, by judicious legislation, our schools were placed abreast of the best of the United States, with a free library in every school district, and the teachers fairly remunerated. The parents are proud of their schools, proud of their children, and proud of their instructors. Our citizens bless the man who laid the foundations of the free public school of California.

S. A. W.

City Superintendent.

As City Superintendent, Mr. Swett has stamped our schools with his own marked individuality—alert, active, progressive, practical.

For years the fund for books had been diverted from its proper use. Now our libraries and supplementary readers bear witness to his watchful oversight.

Our course of study is an evidence of the care which repressed an unwise desire to crowd pupils, while is fostered essentials in training the body, mind and soul of the child. Proper deportment, clear thought and kindly feeling were insisted upon in every grade. The systematic training of the moral nature of the child was considered the foundation for its outward expression in politeness, cleanliness and right doing.

Elementary science, free hand drawing, clear penmanship and pure language were taught as related to each other. Reading, history and patriotism were allied.

Frequent and free discussion of methods at grade meetings and lectures by leading educators at teachers' institutes quickened thought. In brief, as the children's guardian, the parents' friend and the teachers' ally, Mr. Swett will be known and honored while memory lasts.

A. G.

Author.

The literary work of John Swett marks an epoch in the creation of a literature of education in the United States. He was more than a pioneer in a new land; he was a pathfinder to the hitherto undiscovered bourne of an ideal school system.

As a teacher, as far back as 1854, his speeches and papers read before the teachers of a young city, had attracted immediate attention by

reason of the broad views they enunciated of the teacher's sphere, of their progressiveness, of the radical changes they advocated in existing conditions.

John Swett was already a prominent figure, when in 1859, as founder and editor of the *Bookseller*, the first educational journal published west of the rocky mountains, he began that course of essays which, continued in the *California Teacher* for six years, has impressed with the characteristics of his own vigor and thought, a generation of schoolmen who are not confined to the Pacific Slope, but found wherever the English language is read or spoken.

The reports, which emanated from the pen of John Swett during his long service as State Superintendent of Public Instruction, and as City Superintendent, are not mere collections of facts and figures.

While they contain exact statements of the progress and condition of the school system in the State or its metropolis, every volume includes essays on momentous educational questions. The chief merit of these productions lies not so much in the fact of their literary merit, though clearness, vigor and eloquence are distinguishing characteristics of Mr. Swett's style.

But the masterly manner in which his subjects are handled has commended them to the attention and support of the philosopher and the statesman in many sections of the Union. His ideas have thus become incorporated in the school legislation of other States than ours, and it is not too much to say, that if we wish to see the outline of the educational systems of the United States, they may be found in the early writings of John Swett.

The school books which bear the imprint of John Swett's name upon their title pages furnish the same evidence of originality and progressiveness. Each book, when published, was the first of its kind and the herald of a new departure in text-books for the use of our children.

His works were the forerunners of the modern scientific school book. They are based on the laws of natural growth in the mind of the child, not on empirical laws, whereby teaching is mechanical and learning wearisome and unfruitful.

John Swett's work in educational literature embodied in these volumes of reports and essays and text-books is a lasting monument of glory to himself, and a heritage of usefulness to his fellow citizens.

A. L.

Benefactor.

The schools and teachers of San Francisco have never had a better friend than John Swett. He has raised the standard of the teacher's profession. To him we owe the obtaining of state educational and life diplomas, without being subject to technical and useless examinations, to prove our capacity for doing our daily work.

To him we owe the Tenure of Office Bill. It has saved our schools from ruin. It has blocked the aims of the wily politician, and, worse than the politician, of the so-called Reformer, to "make vacancies."

Is there a teacher in this department who does not know of the "ways that are dark and the tricks that are vain" that are resorted to, every time the legislature meets, to destroy this just law?

Is there a teacher who does not know that through it John Swett saved us from the annual re-election, the star-chamber councils, the helpless slavery of former years?

And what is the Tenure of Office law? Simply this, that, before a teacher can be dismissed, charges must be filed against him, and an open investigation and fair trial granted. The greatest criminal in the land is entitled by law to as much.

If a teacher can be found ignorant of these things, then such a one may be unconscious of the deep debt of gratitude we owe to John Swett.

A. M. M.

Man.

After all, I believe the secret of John Swett's wonderful success in educational endeavor is to be found in Swett, the man, rather than in Swett, the teacher. Without his earnestness, directness and intuitive knowledge of what should be, his position as State Superintendent would have availed him little in his lawmaking. It must not be forgotten that when his proposed improvements in the school laws were brought forward the nation was in the throes of civil strife and that California was "a small United States." If it is difficult in these times of peace and progress to draw the attention of the legislators to needed reforms in the department of public instruction, what must it have been then? But Mr. Swett succeeded because his manner always showed his sincerity. Honest men of an investigating turn were convinced that nothing less than he asked for would be sufficient, and the good fellows of all parties heard him attentively, because he was himself a prince of good fellows.

I shall never forget my first experience as one of Mr. Swett's assistants in the city evening schools. I had first met him in 1866 at a teachers' examination, where he impressed me as a very kind, affable gentleman. My next interview was in 1868, when the Chairman of the Committee on Evening Schools directed me to "tell Swett I have sent you to take charge of the commercial class." I asked the gentleman for a note, but I was curtly cut off with the order, "Do just as I tell you." I felt it was not the proper way, and when Mr. Swett said with, as I thought, unnecessary severity, "Come along, sir," and led me almost at a trot to the room, I was certain that I might expect no friendship from him, and for one entire evening I harbored that belief. I say, "for

one evening," because the very next he was on hand, bright and early, to offer suggestions and advice, withal encouraging me to express my own opinions, which, whenever they had any merit, he warmly approved. I was a very young teacher, and he was my mentor; but John Swett differed from the guardian of Telemachus in being the guide and protector of a whole class, and not of one individual. When, after a few months under his principalship, I announced that I was a candidate for the position of sub-master in one of the grammar schools, and asked if he could give me a letter of recommendation to the Directors, he answered, without a moment's hesitation, "Why, I will not only give you a letter; I will go personally to them to urge your appointment." I certainly considered myself specially favored; but I wasn't. Swett was simply "built that way." He was always ready to go further than any one else to help a teacher he deemed worthy or needy, and in the latter case, he did not withhold relief until the sufferer could be proved a saint, but apparently enjoyed being occasionally victimized, rather than permit the deserving to go unassisted. His home was the Mecca to which every educational pilgrim turned, and never turned in vain, for

"To relieve the wretched was his pride,
And e'en his failings leaned to virtue's side."

J. O'C.

It is ordered that these tributes be handsomely engrossed and presented to Mr. Swett, and that printed copies thereof be placed in the school libraries of San Francisco.

Signed by the committee:

A. L. MANN,
JEAN PARKER,
ALBERT LYSER,
S. A. WHITE,
AURELIA GRIFFITH,
AGNES M. MANNING,
JOS. O'CONNOR.

San Francisco, April 2, 1895,

In Memoriam.

Even in the most exalted state,
Relentless sweeps the stroke of fate;
The strongest fall.

—LONGFELLOW.

ANDREW JACKSON MOULDER.

"Ah, that pure, noble spirit has gone to its rest,
And the true handles nerveless and cold on his breast;
But the name and the memory, these never will die,
But grow brighter and dearer as ages go by."

On October 14, Superintendent Andrew J. Moulder died. He was known and respected by a large majority of our citizens. By the teachers he was trusted and loved as a tried and true friend. In matters pertaining to the schools he was far-seeing and wise. In affairs of the City, State and Nation he was remarkably intelligent and high-minded. Men of far less ability have aspired to the highest offices of the State and Nation. His death, coming as it did, was a calamity to the schools. No one could be nearer to the confidence and heart of the teachers.

The writer of these words wishes to record here the most affectionate tribute that love can pay the memory of a modest, cultured, broad-minded, sincere, loyal, appreciative friend. His ever-courteous presence was like a benediction. He was the highest type of American gentlemen.

RESOLUTION OF THE BOARD OF EDUCATION.

WHEREAS, In response to the final summons which must sooner or later come to all, our esteemed associate and co-laborer, Andrew Jackson Moulder, Superintendent of Schools of San Francisco, has gone to rest from his work on earth; therefore

Resolved, That in the death of Andrew J. Moulder we mourn the loss of no ordinary man. As an educator, his name will remain indissolubly connected with the Educational History of San Francisco,

and of California. As a pioneer in the work of public education here, he dedicated to the cause the enthusiasm, energy and industry of his young and vigorous manhood; and, with clear and far-reaching vision, was instrumental in laying broad and deep the foundation of our splendid system of free elementary and higher education. To him also was granted the rare privilege of seeing in the magnificent superstructure, the full fruition of his hopes and labors; and still more that of being called by his appreciative and grateful fellow-citizens to the management, in its full and stalwart maturity, of the system which he nurtured and directed in its infancy; and so, full of years and of honors, he laid down the work only with his life. His name and his services will ever be held in fond and grateful remembrance alike by the teachers, pupils, patrons and officers of our Public Schools. Sincere and earnest of purpose, dignified of bearing, yet courteous of manner and gentle of speech, firm for the right as he saw it, yet calmly and graciously considerate of the opinions of others, sound in scholarship and clean of thought, he everywhere and always, in private as in public life, most worthily bore and nobly graced the highest title which man can bear—that of the true American gentleman—and as a model of such in its highest type, he has left his example as a rich heritage to the youth of the city.

Resolved, That we extend to his widow and children in the shadow and sorrow of their great bereavement, our sincere, respectful sympathy.

Resolved, That when this Board adjourns, it do so in respect to the memory of Andrew J. Moulder.

Resolved, That these resolutions be spread in full upon the minutes, and that an engrossed copy be sent to the family of the deceased.

MEMORIAL EXERCISES.

At a meeting of the San Francisco teachers, called to honor the memory of Mr. Moulder, a memorial address was read by Miss Cahalin, Principal of the Peabody School; and President Kellogg of the State University, ex-State Superintendent Fred M. Campbell, Mrs. Mary Prag of the Girls' High School, School Director Charles A. Murdock, and Joseph O'Connor, Principal of the Horace Mann School, spoke of Mr. Moulder in his various relations of Regent of the University and State and City Superintendent of Schools. The exercises were a fitting tribute to the memory of one of the most distinguished and honorable men of his time. I regret that I am not able to give all of the addresses.

MEMORIAL ADDRESS.

The Ruler of the Universe has called from his work on earth our Superintendent, associate, friend, Andrew Jackson Moulder.

In memory of those rare qualities of mind and heart which during his long life endeared him to all with whom he came in contact, the teachers of the public schools of San Francisco, his co-workers in the cause of education, meet to-day to give this expression of their respect and to extend to his bereaved ones the offering of a heartfelt sympathy.

For on us the name and form and daily life of Andrew J. Moulder have left an impress not transient, but, like the immortal flame of his own true spirit, destined to influence countless generations yet to be.

Not alone because of his services rendered in the educational world, as an organizer of the public school system of California, as an able Superintendent of Schools of this city, not by reason of long and faithful service rendered to higher education in the University of California and the State Normal School, do we now meet to honor his memory. These labors, invaluable as they are, are not to be compared to the influences radiated from his noble, strong, chivalrous manhood. It is these personal qualities that make the name of Andrew J. Moulder an example—a type of the true American character.

May his wife and children remember in their loss that the grateful memory of the thousand teachers mingle with their sorrow, and may this knowledge serve to bring sweet fruitage of hope and resignation.

MRS. PRAG'S ADDRESS.

I have but a few short simple words to add to the glowing eulogiums to which you have listened this afternoon.

Sir Philip Sydney himself, "the mirror of all courtesy," describes one of his characters as a man "with high erected thoughts, seated in the heart of courtesy." Such a man was our friend Andrew J. Moulder.

Do we ever realize how much of the world's happiness depends upon the manners and bearing of those with whom we are thrown in contact? No one can feel this more than the women who have to go out into the world and take upon themselves the struggle for existence. Brought into daily contact with "all sorts and conditions of men," pushing, crowding, fighting their way along, how soon these women learn to fully value "the small sweet courtesies of life." How much these courtesies help toward making life bearable. There are few women who appreciate this fact more than do the teachers of our School Department. They have much to rasp and worry them; body and soul grow weary; at times they seek for advice and assistance from those in authority. They go, sometimes in fear and trembling. How delightful, how charming, to be met with gentleness, with kindness, with unfailing courtesy. So was every teacher met when duty or pleasure brought her into the presence of Andrew J. Moulder. "He was the kindest of men, the best conditioned and unwearied spirit in doing courtesies." His intellect aroused our admiration, his uprightness commanded our respect, but

the characteristic which impressed itself upon our hearts was his gracious manner, his sweet urbanity. He was a gentleman in the truest sense of the word. "The very pink of courtesy," graced with polished manners and fine sense. To each and all he gave patient, courteous hearing and kindly consideration. His very presence soothed and comforted, so that all soon learned to love and trust him. May we, one and all of us, learn from the chivalrous manner and perfect courtesy which marked the life and character of our friend, the lesson Emerson taught, when he said, "Life is not so short but there is always time for courtesy."

MR. CAMPBELL'S ADDRESS.

Next Monday—November 4th—will mark the fortieth anniversary of the election of Andrew J. Moulder to the office of State Superintendent of Public Instruction. He was the third person in regular order who has filled that office, and the one who filled it for the longest time, viz.: six years.

In the prime of young and vigorous manhood he entered upon the duties of his position, well equipped by natural executive ability; and, inspired by a worthy ambition, and following high ideals, he wrought faithfully and vigorously during his long term, as a pioneer in furtherance of a broad and comprehensive scheme of free public education for California.

His accession to that position being but seven years after the first influx of people who were attracted by our rich gold fields, he stands conspicuously forth with the Durants, Willeys, Kelloggs, Braytons and Swetts—towering above the mere gold-seekers as one of those who, seeing the possibilities for a great commonwealth on this Pacific Slope, bent all his splendid energies to laying broad and deep, the only safe foundation upon which a free State may rest, viz.: the widest possible opportunities for high intelligence among all the people.

His works as State Superintendent live after him, and will always remain a splendid monument to his memory. As a successor to him in that office at a later day, I bring this message here, and lay upon his bier an humble tribute of respect and of remembrance for the faithful, earnest, intelligent, disinterested official service he thus rendered the State in its highest and most important interests.

But I bear a double message, and am permitted also here to speak of Mr. Moulder from sentiments of a closer and tenderer nature; to speak as one whose privilege it was for more than a third of a century to greet him as friend, and to be received and acknowledged as such by him; as one who knew him well and loved him much, and to whom the announcement of his death came with the shock of a personal bereavement.

Brave always in the conscious rectitude of his purposes, his manner of maintaining his position and his convictions, were nevertheless invariably tempered by a kindly and courteous consideration for the feelings of others. His gentle tones were the reflex of the purity of his thought and the tenderness of his heart. His courtly dignity of bearing was harmoniously blended with sympathetic affability of manner and address; his earnestness seasoned with the modesty of true scholarship—in short, Andrew J. Moulder was a model of what a true gentleman is, what a true gentleman should be. As such he has left an example most valuable in these days of vulgar self-assertion, of aggressive self-conscious young America.

"His life was gentle, and the elements so mixed in him, that nature might stand up and say to all the world, this was a man."

Having given the service of his young manhood to the cause of public instruction in California, having devoted to the same cause in this city the energy, experience and ripened judgment of his maturer years, fitting it was that when, in the fullness of years, he was called to his final reward, the message should find him ministering at the altar in that grand and beautiful temple, in the planning and building of which he bore so large a part.

Brave heart, dear friend, good citizen, faithful public officer, ripe scholar, true gentleman, farewell!

"There's rosemary—that's for remembrance;
And there is pansies—that's for thoughts."

MR. O'CONNOR'S ADDRESS.

In speaking of our departed friends we are so careful to follow the old maxim, *de mortuis nil nisi bonum*, and so prone to exaggerate their virtues, that post mortem reviews of character are generally misleading and often untrue. In the case of Andrew J. Moulder, however, the Roman caution is entirely unnecessary, for no one can truthfully say anything not good of him and the highest tribute to his memory would be a truthful enumeration of his qualities as a man and of his services as a citizen. Even had I sufficient time I should be unequal to the proper performance of this task, as my intimate acquaintance with Mr. Moulder runs back but little over twelve years and is confined officially to his services in our School Department. But our friend's record, being closely interwoven with the history of our State, is public property, and I ask you but just to glance with me at that record.

For nearly half a century A. J. Moulder has been under the eyes and in the service of the people of California. He was City Controller or Auditor during the turbulent pioneer days of San Francisco; Superintendent of Public Instruction before California had formulated School Laws or evolved any definite system for the conduct of public instruc-

tion; a Regent and Secretary of the University of California during the infancy of that institution; one of the first Trustees and afterwards the Secretary of the San Francisco Free Public Library; next Superintendent of Common Schools of this City and County; later an officer of the U. S. Mint, and once again our well loved Superintendent.

Can any praise be higher, any tribute more glowing than the simple fact that after all this long and varied public service, amid the criminations and recriminations of opposing political parties, no one can, and no one ever could, point to a single discreditable or even imprudent act of his? What an example of good citizenship! What a noble model for the aspiring young men of to-day!

In the last political campaign, I remember how amused Mr. Moulder was when the rumor reached him that some of his antagonists, knowing full well they could not impugn his integrity, and also understanding all about his kindly disposition, gentle manners and high sense of right, were endeavoring to turn these virtues against him by claiming that, if elected, he would be so lenient that the drones of the Department could do just as they pleased, and that that was why a majority of the teachers wanted him. A more foolish calumny was never uttered. The teachers well knew that he would neither countenance nor palliate wrong-doing on their part; but they knew equally well that he would not be a party to and would not tolerate any trickery or injustice calculated to injure any employee of the Department, and that is why the most meritorious teachers, rather than the drones and influence people, supported him. They knew he would be just to all. Favoritism and persecution had, during Mr. Moulder's absence from the Superintendency, frequently taken the place of justice, and the teachers turned to him as their champion to re-enthroned the blind goddess.

It is unnecessary for me to repeat what other speakers have so well expressed. My task has been to show why the teachers loved Superintendent Moulder and now revere his memory; but I who have known him intimately, must say for myself that I never found a character more complete. From whatever point we regard him, whether as the affable, courtly gentleman in whose presence coarseness vanished, the conscientious official, neglecting his health to perform his duties, the constant, generous friend, or the kind, loving husband and father, Andrew Jackson Moulder was one man among ten thousand; and it is because, knowing him as we do, we can so well understand the awful bereavement, the irreparable loss to his family, that our hearts go out to them in true and full sympathy during this season of their greatest grief.

In conclusion, I would say as a word of solace to the widow and children of our departed friend, that the example he has set and the uniformly high appreciation of his virtues should soothe their troubled spirits and should go far to assist the healing hand of time in assuaging their heavy sorrow.

MISS LILLIE E. GALLAGHER.

Miss L. E. Gallagher, for many years a teacher in the Everett School, died April 23, 1895. She was born in Missouri, but came to California with her parents in the early sixties. She completed her education by graduation from the State Normal School, and soon afterwards entered upon what was literally a life-work as a teacher, for after a service of more than twenty years, she left the school room only to die.

Her work was confined to the instruction of little children just entering school, a duty for which her gentle manner and conscientious nature peculiarly fitted her. Those to whom she was best known—her friends and the hundreds of children to whom she ministered—will always hold her in loving remembrance.

MISS HELEN A. SINGLEY.

April 7, 1895, she was suddenly called to eternal rest; and there passed from earth to heaven a thoroughly earnest, conscientious and faithful worker in our School Department—Miss Helen A. Singley, a teacher in the Longfellow Primary School.

Miss Singley was born in California. She received her education in the public schools of Sonoma county. Very shortly after leaving the school room as a pupil she entered it as a teacher. She taught for many years in the schools of Petaluma, resigning her position there to accept one in the San Francisco School Department. She was assigned to the Longfellow Primary School, December, 1891, where she remained until her death.

Miss Singley brought to bear upon her school room work untiring zeal, a sunshiny disposition, cheerful manner and a very kind heart; all of which make children enjoy school and fond of their teacher.

One of a large family, her energetic support, constant thoughtfulness and gentle sympathy testify to her great and unselfish love. She was the care-bearer of the family; her death caused the first break in her family circle. Father, mother, brothers, sisters, fellow-teachers and friends, all deeply mourn her loss.

MISS MARY BATTEN.

Miss Mary Batten was appointed to the Buena Vista School in July, 1888, and from that time until her death, in August, 1894, gave the most careful, conscientious work, inspired by an enthusiasm and earnestness that never flagged, and the wisdom and tact that her long experience in country schools and years of careful study had given her.

A lovely character, so self-poised and disciplined that her pupils seemed to take from her the power of self-control and a strong feeling of personal responsibility—in fact, her influence in the school still endures, and hardly a day passes that her name is not gratefully and lovingly mentioned.

Her young life is ended. Perhaps had she spared herself more her stay here might have been longer; but when we measure life by deeds, not years, hers seems complete and full.

MRS. F. E. REYNOLDS.

Mrs. F. E. Reynolds was a teacher in this department for 30 years or more; 18 years of this time she was Vice Principal of the Hayes Valley Grammar School (the John Swett Grammar School), which position she filled honorably. For the last few years of her teaching she was an assistant in the Rincon Grammar School. Mrs. Reynolds was a faithful, conscientious teacher. Her last year's service must have been one of great suffering, yet she worked on so uncomplainingly that her own family, even, did not realize that a mortal disease was upon her. Worn out by her long years of teaching, she took to her bed for a "few days" (she thought), never again to resume her life work. September 19, 1894, she passed to that Haven of Rest where one is never weary nor sick. Faithful in every relation in life, at last she has heard the Master say, "Well done, good and faithful servant."

How many such there have been, and still are, in our ranks! How tardy often are we in expressing our appreciation of such faithful service!

It is *well* to honor our dead, and pay *just* tribute to those who fall in the ranks; *better still* to speak words of encouragement and praise to the faithful teachers still in our midst.

MRS. A. C. PALMER.

On June 19, 1893, Mrs. A. C. Palmer, a teacher in the San Francisco schools, ended her life work here and was transferred to the School that is never dismissed, taught by the greatest Teacher the world has ever seen. At Napa Springs, in the early days of the summer vacation, she was called to that Rest which He giveth His beloved.

Mrs. Palmer became a member of the school department in March, 1877. Her first work was done in the Valencia Grammar School. Later she became one of the corps of teachers in the Lincoln Grammar. A graduate of the High School at Newburyport, Mass., she was well fitted for her chosen profession. Among her classmates were the gifted writers, Jane Andrews and Harriet Prescott Spofford.

Faithful and true, earnest and untiring, stern, but just, hating the wrong and loving the right, many a Lincoln School boy, now grown to manhood, is the better man for thy precept and example, and holds thy name in reverence and esteem!

MISS CAROLINE R. PUTNAM.

Miss Caroline R. Putnam died in New York city July 8, 1894. She was a teacher in the Denman School from February 12, 1878, to March 22, 1894, when she was obliged to ask for leave of absence on account of the disease to which she finally succumbed.

Miss Putnam belonged to a cultivated family, was herself highly educated, and showed marked proficiency and fine taste in literature and music.

Immediately after her graduation, she was appointed a teacher in the Denman School, and labored there uninterruptedly up to her untimely death. She was an excellent teacher and disciplinarian, extremely conscientious in all her work, and she exercised a most refining influence upon her pupils.

She was more than a faithful and successful instructor in all the branches of the prescribed course of study, for she devoted herself to the development of the character of her pupils, cultivating their taste, refining their manners, and elevating their motives. Her memory is cherished by her associate teachers and by hundreds of grateful pupils whose souls have received the impress of her noble mind and of her pure heart.

MISS EVA WHITE.

It is seldom we are called on to chronicle in our School Department so sad a death as that of Miss Eva White, teacher in the Edison Primary School. Broad-minded and progressive in her thought, hopeful and bright in her nature, Miss White was just the character to place over little children as teacher and guide. She was born in California, educated in our public schools, and possessed of a splendid physique that promised strong work in the future, but, unfortunately, her young life and aspiration were blighted, and Death came, all too soon, to claim his "shining mark."

Her work in the schools was always *excellent*, for she led in her classes in the Primary, Grammar, High School, and finally graduated at the head of the Normal Class of 1890, winning the first prize position in the School Department, which position she ably filled until her death.

She was well able to pursue the advanced studies of the University, which she would have done, but her loyalty to her parents and her high sense of duty led her to take up the active struggle in their home life, of which she was the light and joy. Her strong personality endeared her to all of her teachers and companions who valued her high qualities of mind and great moral worth.

As a teacher she was alert, accurate and just. She esteemed her Normal course greatly, and often spoke of its practical value to her in the daily routine of her class work. She was the daughter of Professor William White, who for many years taught in our High Schools. Her mother was her most intimate friend, and their devoted companionship had much to do with her high purpose in life.

Stricken down in her young womanhood, in her 23d year, with an unblemished name, her work faithful and true, let us hope that her memory will be kept green in the annals of our Department.

DUDLEY C. STONE.

Dudley C. Stone, special teacher of Elementary Science, was killed by an electric car on December 1, 1895. He was sixty-eight years of age at the time of his death, but full of mental and physical vigor, in excellent health and high spirits, and giving promise of many years of active labor in our School Department, which he had already served so long and well.

Mr. Stone was born and educated in Ohio, where he was graduated from Marietta College at the age of eighteen. After graduation, he went to New Orleans to teach, and in the early fifties he came to California and settled at Marysville. Here, for many years, he was the most prominent educator in Northern California, and here he developed that taste for research in the sciences of nature which distinguished his subsequent career.

He was elected to the public schools of this city in July, 1873, after having taught a few years in the private schools of Oakland and Berkeley.

He was appointed Deputy Superintendent by H. M. Bolander in 1875, reappointed by A. L. Mann in 1877, and by J. W. Taylor in 1880. At the expiration of Superintendent Taylor's term in 1883, Mr. Stone was elected teacher of science in the Girls' High School.

As Deputy Superintendent, Mr. Stone was a judicious adviser of teachers, a frequent and welcome visitor to their classes, and an excellent examiner of the schools, under the former system of periodic written examinations, directed by the Superintendent.

As a teacher, he had a bright, active mind, a vast store of information, a prodigious memory, a clear style, a ready exposition, a warm sympathy with his pupils and a youthful freshness of feeling and manner that remained his most striking characteristic to the end of his life.

He was elected special teacher of Elementary Science in 1893. This was a post especially adapted to his tastes and his acquirements, and, at the same time, one in which he could render signal service to schools, in making familiar and attractive this rather novel province of the revised course of study. The needs of the Normal School, in which his services were frequently demanded and highly appreciated, took him away so much from his special duties that the schools have had only enough of his help to get glimpses of his methods, to catch a little of the enthusiasm of his

spirit and to realize fully the irreparable loss we have suffered by his sudden removal.

He leaves behind him the memory of a long, useful, beneficent life—a life devoted not to the making of riches, but to the accumulation of knowledge—knowledge which he did not use as a means of selfish culture, but for the improvement and the delight of the young.

He leaves in the hearts of his fellow-teachers the image of a learned, kindly, genial gentleman, whom it was an advantage to know and whom it is a happiness to remember.

JAMES G. KENNEDY.

By the death of James G. Kennedy, Principal of the San Francisco Normal School, the cause of education lost one of its ablest exponents.

From a sturdy Scotch ancestry, he inherited an active, logical mind.

His boyhood, after crossing the plains with his parents in 1854, was devoted to the toil incident to life on a ranch, and later to mining, with occasional brief intervals at a country school, where, by dint of hard study, he mastered the elements of an education. Subsequently he graduated from the San Jose Normal School, taught several terms in country districts, was County Superintendent, member of the Board of Education, Principal of a grammar School, Principal of a high school, and City Superintendent of Schools in San Jose.

In 1886 he entered the San Francisco School Department, where he filled the position of class teacher, Principal of a grammar school, Inspector of Schools, and Principal of the Normal School. He was President of the Cogswell Polytechnic School during the years 1888-89-90.

Always active, studious and progressive, there is nothing more noticeable in James G. Kennedy's life than his marked growth in later years. He had always placed for himself a high standard of professional worth.

Mr. Kennedy was hardly a middle-aged man when he died, and it can scarce be doubted that the arduous mental labors attendant on what he deemed the proper administration of his duties, brought about his untimely end.

Not only by his family, to whom he was a devoted husband and a loving father, will he be mourned; but in all the councils of the friends of popular education.

CONCLUSION.

In conclusion I wish to express in most positive phrase my high appreciation of the people and the press of San Francisco for their very cordial support of the schools; of the pupils, for their uniformly studious habits, and their almost always good-natured, cheery obedience; of the teachers, for their genial, earnest, able devotion to duty, and of the members of the present Board of Education, for the intelligent courage with which they manage the schools.

Very respectfully submitted,

MADISON BABCOCK,

Superintendent of Schools.

STATISTICAL REPORT.

Compiled by GEORGE BEANSTON, Secretary of the Board of Education.

STATISTICAL REPORT.

GENERAL STATISTICS.

| | 1894. | 1895. |
|---|------------------|------------------|
| Population of the city—1890. | 298,997 | |
| Number of youth in the city under 17 years of age. | 92,026 | 93,558 |
| Number of youth in the city between 5 and 17 years of age who are entitled by law to draw public money. | 68,390 | 70,006 |
| Assessment roll of the taxable property of the city. | \$342,644,179 00 | \$325,108,898 00 |
| Receipts of the School Department. | 1,051,153 34 | 1,076,099 30 |
| City school tax on each hundred dollars. | 10.95 cts. | 12.10 cts. |
| Estimated value of school sites. | \$3,230,900 00 | \$3,240,700 00 |
| Estimated value of school buildings. | 1,527,630 00 | 1,558,744 00 |
| Estimated value of school furniture. | 257,568 00 | 277,568 00 |
| Estimated value of school libraries. | 10,506 85 | 10,827 80 |
| Estimated value of school apparatus. | 36,759 00 | 52,418 00 |
| Total value of school property. | \$5,063,363 85 | \$5,140,257 80 |

GENERAL STATISTICS—CONCLUDED.

| | 1894. | 1895. |
|--|-------|-------|
| Number of Normal Schools..... | ..... | 1 |
| Number of High Schools..... | 2 | 2 |
| Number of Polytechnic High Schools..... | 1 | 1 |
| Number of Grammar Schools..... | 20 | 20 |
| Number of Primary Schools..... | 44 | 45 |
| Number of Evening Schools..... | 6 | 6 |
| Total number schools | 73 | 75 |
| Number of brick school buildings owned by the department | 7 | 7 |
| Number of wooden school buildings owned by the departm't | 63 | 64 |
| Number of buildings rented by the department..... | 11 | 8 |
| Total number of buildings used by the department. | 81 | 79 |

SCHOOL ATTENDANCE.

| | 1894. | 1895 |
|--|--------|----------|
| Enrollment in the Normal School..... | | 86 |
| Enrollment in the High Schools..... | 1,230 | 1,257 |
| Enrollment in the Polytechnic High School..... | 571 | 516 |
| Enrollment in the Grammar and Primary Schools..... | 33,262 | 33,472 |
| Enrollment in the Evening Schools..... | 4,286 | 4,384 |
| Total enrollment..... | 44,349 | 44,822 |
| Total average number belonging..... | 35,039 | 35,079 |
| Average daily attendance in the Normal School..... | | 80.2 |
| Average daily attendance in the High Schools..... | 976 | 987.8 |
| Average daily attendance in the Polytechnic High School... | 457 | 475.6 |
| Average daily attendance in Grammar and Primary Schools. | 29,718 | 29,663.2 |
| Average daily attendance in Evening Schools..... | 1,788 | 1,813.1 |
| Total average daily attendance..... | 32,939 | 32,974.2 |

NUMBER OF TEACHERS IN DEPARTMENT BY GRADES—JUNE, 1895.

| SCHOOLS. | Grammar Grades. | Primary Grades.. | Principals without Classes..... | Vice-Principals... | Total | Men | Women..... |
|-----------------------------|-----------------|------------------|------------------------------------|--------------------|-------------|-----------|------------|
| Agassiz Primary..... | .... | 12 | .... | .... | 13 | .... | 13 |
| Bernal Heights Primary..... | 1 | 6 | .... | .... | 7 | .... | 7 |
| Broadway Grammar..... | 5 | 9 | 1 | 1 | 16 | ... | 16 |
| Buena Vista Primary..... | .... | 4 | .. | .... | 4 | ... | 4 |
| Chinese Primary..... | .... | 3 | .... | .... | 3 | ... | 3 |
| Clement Grammar..... | 6 | 7 | 1 | 1 | 15 | .... | 15 |
| Cleveland Primary..... | .... | 9 | 1 | .... | 10 | ... | 10 |
| Columbia Grammar..... | 4 | 9 | 1 | 1 | 15 | .... | 15 |
| Cooper Primary..... | .... | 12 | 1 | .... | 13 | .... | 13 |
| Crocker Grammar..... | 3 | 8 | 1 | 1 | 13 | 1 | 12 |
| Denman Grammar..... | 8 | 7 | 1 | 1 | 17 | 1 | 16 |
| Douglass Primary..... | .... | 4 | .... | .... | 4 | .... | 4 |
| Edison Primary..... | .... | 9 | 1 | .... | 10 | .... | 10 |
| Emerson Primary..... | .... | 12 | 1 | .... | 13 | .... | 13 |
| Everett Primary..... | 4 | 9 | 1 | 1 | 15 | 1 | 14 |
| Fairmount Primary..... | 2 | 10 | 1 | .... | 13 | .... | 13 |
| Franklin Grammar..... | 8 | 6 | 1 | 1 | 16 | 1 | 15 |
| Fremont Primary..... | 1 | 7 | 1 | .... | 9 | ... | 9 |
| Garfield Primary..... | .... | 12 | 1 | .... | 13 | .... | 1 |
| Girls' High..... | .... | .... | 1 | 1 | 17 | 3 | 14 |
| Golden Gate Primary..... | .... | 8 | 1 | .... | 9 | .... | 9 |
| Haight Primary..... | .... | 11 | 1 | .... | 12 | .... | 12 |
| Hamilton Grammar..... | 13 | 2 | 1 | 1 | 17 | 1 | 16 |
| Harrison Primary..... | .... | 8 | .... | .... | 8 | .... | 8 |
| Hawthorne Primary..... | .... | 10 | 1 | .... | 11 | .... | 11 |
| Hearst Grammar..... | 4 | 9 | 1 | 1 | 15 | .... | 15 |
| Henry Durant Primary..... | .... | 12 | 1 | .... | 13 | .... | 13 |
| Horace Mann Grammar..... | 15 | 1 | 1 | 2 | 19 | 2 | 17 |
| Humboldt..... | .... | 12 | 1 | .... | 13 | .... | 13 |
| Irving..... | .... | 8 | 1 | .... | 9 | .... | 9 |

NUMBER OF TEACHERS IN DEPARTMENT BY GRADES, JUNE, 1895—CONTINUED.

| SCHOOLS. | Grammar Grades.. | Primary Grades... | Principals without Classes..... | Vice-Principals... | Total | Men | Women |
|----------------------------------|------------------|-------------------|------------------------------------|--------------------|-------------|-----------|-------------|
| James Lick Grammar..... | 5 | 10 | 1 | 1 | 17 | 2 | 15 |
| Jefferson Primary..... | | 9 | 1 | ... | 10 | ... | 10 |
| John Swett Grammar..... | 8 | 8 | 1 | 2 | 19 | 2 | 17 |
| Lafayette Primary..... | | 8 | 1 | ... | 9 | ... | 9 |
| Laguna Honda..... | | 2 | ... | ... | 2 | ... | 2 |
| Le Conte Primary..... | | 8 | 1 | ... | 9 | ... | 9 |
| Lincoln Grammar | 10 | 8 | 1 | 2 | 21 | 4 | 17 |
| Longfellow Primary..... | | 11 | 1 | ... | 12 | ... | 12 |
| Lowell High..... | | ... | 1 | 1 | 16 | 14 | 2 |
| Madison Primary..... | 1 | 3 | ... | ... | 4 | ... | 4 |
| Marshall Primary..... | | 12 | 1 | ... | 13 | ... | 13 |
| Mission Grammar | 9 | 4 | 1 | 1 | 15 | ... | 15 |
| Monroe Primary..... | 1 | 3 | ... | ... | 4 | ... | 4 |
| Moulder Primary..... | | 10 | 1 | ... | 11 | ... | 11 |
| Normal School..... | | ... | 1 | 1 | 3 | 1 | 2 |
| North Cosmopolitan Grammar..... | 7 | 3 | 1 | 1 | 12 | ... | 12 |
| Ocean House Primary. | 1 | ... | ... | ... | 1 | 1 | ... |
| Pacific Avenue Primary | | 7 | ... | ... | 7 | ... | 7 |
| Pacific Heights Grammar..... | 7 | 6 | 1 | 1 | 15 | ... | 15 |
| Peabody Primary..... | | 9 | 1 | ... | 10 | ... | 10 |
| Polytechnic High..... | | ... | 1 | ... | 20 | 6 | 14 |
| Potrero Primary..... | 5 | 9 | 1 | ... | 15 | 1 | 14 |
| Redding Primary..... | 1 | 9 | 1 | ... | 11 | ... | 11 |
| Richmond Primary..... | 2 | 6 | 1 | ... | 9 | ... | 9 |
| Rincon Grammar..... | 6 | 4 | 1 | 1 | 12 | ... | 12 |
| Sheridan Primary..... | 2 | 3 | ... | ... | 5 | ... | 5 |
| Sherman Primary..... | | 8 | 1 | ... | 9 | ... | 9 |
| South Cosmopolitan Grammar..... | 12 | 4 | 1 | 2 | 19 | 3 | 16 |
| South End Primary..... | 1 | 3 | ... | ... | 4 | ... | 4 |
| South San Francisco Primary..... | 4 | 8 | 1 | ... | 13 | 2 | 11 |

NUMBER OF TEACHERS IN DEPARTMENT BY GRADES, JUNE, 1895—CONCLUDED.

| SCHOOLS. | Grammar Grades. | Primary Grades... | Principals without Classes..... | Vice Principals... | Total | Men..... | Women..... |
|---|-----------------|-------------------|------------------------------------|--------------------|-------------|----------|------------|
| Spring Valley Grammar..... | 4 | 9 | 1 | 1 | 15 | 1 | 14 |
| Stanford Primary..... | | 8 | 1 | | 9 | | 9 |
| Starr King Primary..... | | 12 | 1 | | 13 | | 13 |
| Sutro Primary..... | 1 | 2 | | | 3 | | 3 |
| Washington Grammar..... | 5 | 6 | 1 | 1 | 13 | 4 | 9 |
| Webster Primary..... | 5 | 13 | 1 | | 19 | | 19 |
| West End Primary..... | 1 | 2 | | | 3 | | 3 |
| Whittier Primary..... | | 17 | 1 | | 18 | | 18 |
| Winfield Scott Primary..... | 1 | 3 | | | 4 | | 4 |
| EVENING SCHOOLS. | | | | | | | |
| Business | | | | | 12 | 8 | 4 |
| Hamilton Evening..... | | | | | 7 | 3 | 4 |
| Horace Mann Evening | | | | | 3 | 2 | 1 |
| Lincoln Evening | | | 1 | 1 | 39 | 10 | 29 |
| Potrero Evening | | | | | 1 | 1 | |
| Washington Evening | | | 1 | | 13 | 2 | 11 |
| Teacher of Elementary Science | | | | | 1 | 1 | |
| Teacher of Drawing..... | | | | | 1 | | 1 |
| Teacher of Cooking | | | | | 3 | | 3 |
| Teacher of Physical Culture | | | | | 1 | 1 | |
| Teacher of Manual Training..... | | | | | 1 | 1 | |
| Teacher of History..... | | | | | 1 | | 1 |
| Unassigned Teachers..... | | | | | 10 | | 10 |
| Teachers of Day Substitute Class..... | | | | | 20 | | 20 |
| Teachers of Evening Substitute Class..... | | | | | 5 | 4 | 1 |
| Totals..... | 173 | 483 | 55 | 28 | 904 | 84 | 820 |

SCHOOL CENSUS MARSHAL'S REPORT FOR THE SCHOOL YEAR ENDING
JUNE 30, 1895.

| | | |
|--|--------|--------|
| Number of white children between 5 and 17 years of age— | | |
| Boys..... | 34,085 | |
| Girls..... | 34,516 | |
| Total..... | | 68,601 |
| Number of negro children between 5 and 17 years of age— | | |
| Boys..... | 174 | |
| Girls..... | 149 | |
| Total..... | | 323 |
| Native born Mongolians between 5 and 17 years of age— | | |
| Boys..... | 556 | |
| Girls..... | 526 | |
| Total..... | | 1,082 |
| Total number of census children between 5 and 17 years of age..... | | 70,006 |
| Number of children under 5 years of age— | | |
| White..... | 23,020 | |
| Negro..... | 100 | |
| Mongolian..... | 432 | |
| Total..... | | 23,552 |
| Number of children between 5 and 17 years of age who have attended public schools at any time during the school year | | 44,968 |
| Number of children between 5 and 17 years of age who have attended private schools, but no public schools at any time during the year..... | | 8,184 |
| Number of children between 5 and 17 years of age who have not attended school at any time during the school year... | 16,854 | |
| Nativity of children— | | |
| Native born..... | 91,215 | |
| Foreign born..... | 2,343 | |
| | | 93,558 |

COMPARATIVE STATEMENT OF THE WHOLE NUMBER ENROLLED AND THE
AVERAGE DAILY ATTENDANCE IN THE PUBLIC SCHOOLS SINCE 1885.

| | Number Enrolled. | Average Daily Attendance. |
|--|---------------------|------------------------------|
| During the year ending June 30, 1885..... | 43,265 | 32,183 |
| During the year ending June 30, 1886..... | 43,140 | 32,146 |
| During the year ending June 30, 1887..... | 43,311 | 31,316 |
| During the year ending June 30, 1888 | 42,330 | 30,191 |
| During the year ending June 30, 1889..... | 42,626 | 31,609 |
| During the year ending June 30, 1890..... | 42,926 | 31,352 |
| During the year ending June 30, 1891..... | 43,626 | 31,809 |
| During the year ending June 30, 1892 | 46,172 | 32,434 |
| During the year ending June 30, 1893..... | 45,775 | 32,799 |
| During the year ending June 30, 1894..... | 44,349 | 32,930 |
| During the year ending June 30, 1895..... | 44,822 | 32,974 |

NUMBER OF TEACHERS IN DEPARTMENT—MAY, 1895.

| | Men | Women. | Total. |
|--|-----|--------|--------|
| Number of teachers in Normal School..... | 1 | 2 | 3 |
| Number of teachers in High Schools—Boys' and Girls'..... | 17 | 16 | 33 |
| Number of teachers in Polytechnic High School..... | 6 | 14 | 20 |
| Number of teachers in grammar grades (including Vice-Principals). | 14 | 183 | 197 |
| Number of teachers in primary grades..... | | 483 | 483 |
| Number of teachers in Evening Schools..... | 26 | 49 | 75 |
| Number of Grammar and Primary Principals without classes..... | 13 | 37 | 50 |
| Number of unassigned teachers and substitutes, day schools..... | | 30 | 30 |
| Number of regular substitute teachers, evening schools..... | 4 | 1 | 5 |
| Number of teachers Physical Culture..... | 1 | ..... | 1 |
| Number of teachers Elementary Science..... | 1 | ..... | 1 |
| Number of teachers Cooking..... | | 3 | 3 |
| Number of teachers Manual Training..... | 1 | ..... | 1 |
| Number of teachers Drawing..... | | 1 | 1 |
| Number of teachers History..... | | 1 | 1 |
| Total number of teachers..... | 84 | 820 | 904 |
| Whole number of principals (included in total)..... | 22 | 53 | 75 |
| Number of principals not required to teach a class (included in total) | 17 | 37 | 54 |
| Number of vice-principals (included in total)..... | 10 | 18 | 28 |

SCHEDULE OF SALARIES, 1894-95.

| | PER MONTH. |
|---|------------|
| HIGH SCHOOLS. | |
| Principals..... | \$250 00 |
| Vice Principals..... | 165 00 |
| Heads of Departments..... | 155 00 |
| Assistants..... | 100 00 |
| Assistants after 1 year's experience..... | 110 00 |
| Assistants after 2 years' experience..... | 120 00 |
| Assistants after 3 years' experience..... | 130 00 |
| Assistants after 4 years' experience..... | 140 00 |
| (Experience in regularly organized High Schools in the United States, under a High School Certificate, to count.) | |
| Teacher of Elocution—Girls' High School..... | 35 00 |
| Teacher of Drawing—Girls' High School..... | 140 00 |
| Teacher of French and English Rhetoric—Girls' High School..... | 100 00 |
| Teacher of Vocal Music—Girls' High School..... | 35 00 |
| First Assistant—Polytechnic High School..... | 80 00 |
| Second Assistant—Polytechnic High School..... | 75 00 |
| Assistants Business Department Polytechnic High School..... | 65 00 |
| Teachers of Typewriting—Polytechnic High School..... | 60 00 |
| Teacher of Typewriting (Miss Garbarino)—Polytechnic High School..... | 65 00 |
| Teachers of Stenography—Polytechnic High School..... | 75 00 |
| Teacher of Spanish—Polytechnic High School..... | 100 00 |
| Teacher of Penmanship—Polytechnic High School..... | 75 00 |
| Teacher of Bookkeeping (Miss Durkee)—Polytechnic High School..... | 65 00 |
| Assistants Business Department and Typewriting—Polytechnic High School..... | 60 00 |
| Assistant Teacher Free-hand Drawing—Polytechnic High School..... | 140 00 |
| Teacher in Manual Training Department—Miss Van Vleck—Polytechnic High School..... | 110 00 |

SCHEDULE OF SALARIES—CONTINUED.

| | PER MONTH. |
|--|------------|
| PRINCIPALS OF GRAMMAR SCHOOLS. | |
| Lincoln, South Cosmopolitan, John Swett and Horace Mann..... | \$200 00 |
| All other Grammar Schools | 175 00 |
| VICE-PRINCIPALS | |
| Grammar Schools..... | 125 00 |
| PRINCIPALS OF PRIMARY SCHOOLS. | |
| Webster and Whittier | 160 00 |
| South San Francisco and Potrero..... | 150 00 |
| Agassiz, Cooper, Emerson, Fairmount, Garfield, Henry Durant, Humboldt, Haight, Longfellow, Marshall, Moulder, Redding, Starr King and Peabody..... | 135 00 |
| Cleveland, Edison, Fremont, Golden Gate, Hawthorne, Irving, Jefferson, LeConte, Stanford, Sherman, Lafayette, Bernal Heights and Richmond..... | 130 00 |
| Pacific Avenue, Harrison and Douglass..... | 120 00 |
| Buena Vista, Madison, Monroe, Sheridan, South End and Winfield Scott..... | 110 00 |
| Chinese, Ocean House, Sutro, West End, Laguna Honda | 100 00 |
| DAY SUBSTITUTES AND PROBATIONARY TEACHERS. | |
| Substitute Teachers..... | 40 00 |
| Probationary Teachers—first year..... | 45 00 |
| Probationary Teachers—second year | 47 50 |
| REGULAR TEACHERS OF GRAMMAR AND PRIMARY GRADE CLASSES. | |
| First year | 50 00 |
| Thereafter a yearly increase of \$3 00 a month, until the following maximum of salaries are reached: | |
| Fifth, Sixth and Seventh Grades | 79 00 |
| Eighth and Ninth Grades. | 83 00 |

SCHEDULE OF SALARIES—CONTINUED.

| | PER MONTH. |
|--|------------|
| Second, Third and Fourth Grades—First year..... | \$50 00 |
| Second year..... | 52 50 |
| Third year..... | 55 00 |
| Fourth year..... | 57 50 |
| Fifth year..... | 60 00 |
| Sixth year..... | 62 50 |
| Seventh year..... | 65 00 |
| Eighth year..... | 67 50 |
| Ninth year..... | 70 00 |
| Tenth year..... | 73 00 |
| Eleventh year..... | 76 00 |
| <p>Provided, that the maximum salary paid to the holder of a primary grade certificate shall be \$68 a month.</p> | |
| Beginners' Classes.—First Grade..... | 83 00 |
| <p>Receiving the same allowance for experience as do teachers of grammar grades.</p> | |
| <p>Assistants in grammar and primary schools, teaching German and English, or English and French, \$5.00 per month in addition to their salaries according to the schedule.</p> | |
| <p>In fixing the salary of grammar and primary teachers, an increase for experience in any of the public schools of the United States shall be allowed, as provided in the foregoing schedule, such increase to commence with probationary teachers.</p> | |
| Teacher class at Hunter's Point (Mr. L. Bowman)..... | 90 00 |
| Teacher of Grammar Department (L. A. Jordan) Washington Gram... | 83 00 |
| EVENING SCHOOLS. | |
| Principal Lincoln Evening..... | 125 00 |
| Principal Washington Evening..... | 100 00 |

SCHEDULE OF SALARIES—CONTINUED.

| | PER MONTH. |
|---|------------|
| Principal Business Evening | \$100 00 |
| Principal Hamilton Evening..... | 75 00 |
| Principals of other Evening Schools..... | 60 00 |
| Assistant Principal Lincoln Evening..... | 85 00 |
| Assistants Evening Schools..... | 50 00 |
| Teacher of High School Classes in Evening Schools..... | 75 00 |
| Head Teacher Mechanical Drawing, Lincoln Evening..... | 60 00 |
| Teacher of Physics, Lincoln Evening..... | 50 00 |
| EVENING AND HIGH SCHOOL SUBSTITUTE TEACHERS. | |
| Substitutes, Evening Schools, per night, for reporting..... | 1 00 |
| Substitutes, Evening Schools, per night, for teaching..... | 2 50 |
| Substitutes, High School, per day, when teaching..... | 5 00 |
| NORMAL SCHOOL. | |
| Principal..... | 225 00 |
| Vice-Principal..... | 175 00 |
| SPECIAL TEACHERS. | |
| Teacher of Physical Culture..... | 125 00 |
| Teacher of Elementary Science..... | 125 00 |
| Teacher of Drawing (Miss K. M. Ball)..... | 190 00 |
| Teacher of Cooking (Miss K. Whitaker)..... | 100 00 |
| Teacher of Cooking (Miss K. Paxton)..... | 60 00 |
| Teacher of Cooking (Miss L. A. Toomy)..... | 60 00 |
| Teacher of Sewing (Franklin Grammar School)..... | 75 00 |
| Teacher of Manual Training (R. E. Eldridge)..... | 75 00 |
| Teacher of Manual Training (J. M. Stockman)..... | 60 00 |
| Teacher of History (Mrs. H. B. Steele)..... | 100 00 |
| Teacher of Sewing—Columbia Grammar School..... | 50 00 |

SCHEDULE OF SALARIES—CONCLUDED.

| | PER MONTH. |
|--|------------|
| OFFICE AND SHOP EMPLOYEES. | |
| Assistant Secretaries, each..... | \$140 00 |
| Secretary Board of Examination..... | 25 00 |
| Typewriter—Office Board of Education..... | 65 00 |
| Typewriter—Office Superintendent of Schools..... | 40 00 |
| Messenger..... | 100 00 |
| Storekeeper..... | 150 00 |
| Assistant Storekeeper..... | 100 00 |
| Inspector of Buildings and Head Carpenter..... | 150 00 |
| Scavenger..... | 110 00 |

NUMBER OF TEACHERS RECEIVING VARIOUS SALARIES, JUNE, 1895.

| | PER MONTH. |
|---|------------|
| 1 teacher music, Normal School..... | \$25 00 |
| 2 teachers of music and elocution, Girls' High School..... | 35 00 |
| 18 probationary teachers, in their first year..... | 45 00 |
| 1 probationary teacher, in second year..... | 47 50 |
| 66 regular teachers, in their first year and Evening School assistants..... | 50 00 |
| 1 primary teacher, with one year's experience..... | 52 50 |
| 2 primary teachers, with two years' experience..... | 55 00 |
| 4 grammar teachers, with two years' experience..... | 56 00 |
| 19 primary teachers, with three years' experience..... | 57 50 |
| 7 grammar teachers, with three years' experience..... | 59 00 |
| 22 primary teachers, with four years' experience and Cooking teachers..... | 60 00 |
| 14 grammar teachers, with four years' experience..... | 62 00 |
| 21 primary teachers, with five years' experience..... | 62 50 |
| 36 grammar teachers, with five years' experience and primary teachers with six years' experience..... | 65 00 |
| 2 probationary teachers, with experience in other parts of the State..... | 66 00 |
| 9 primary teachers, with seven years' experience..... | 67 50 |
| 41 grammar teachers, with six years' experience, and the limit for teachers with primary certificates..... | 68 00 |
| 13 primary teachers, with eight years' experience..... | 70 00 |
| 9 grammar teachers, with seven years' experience..... | 71 00 |
| 19 primary teachers, with nine years' experience..... | 73 00 |
| 14 grammar teachers, with eight years' experience..... | 74 00 |
| 10 special teachers..... | 75 00 |
| 112 primary teachers, with ten years' experience—maximum..... | 76 00 |
| 9 grammar teachers, with nine years' experience..... | 77 00 |
| 142 grammar teachers of the fifth, sixth and seventh grades, with ten years' experience—maximum..... | 79 00 |
| 14 grammar teachers of the eighth and ninth grades, with ten years' ex- perience..... | 80 00 |

NUMBER OF TEACHERS RECEIVING VARIOUS SALARIES—CONTINUED.

| | PER MONTH. |
|---|------------|
| 2 primary teachers at their maximum salaries, with \$5.00 additional for teaching Foreign Languages..... | \$81 00 |
| 1 grammar teacher, with nine years' experience, with \$5.00 additional for teaching Foreign Languages..... | 82 00 |
| 103 teachers of the eighth and ninth grades and of beginners' classes, at their maximum..... | 83 00 |
| 5 teachers of the fifth, sixth and seventh grades, with \$5.00 additional for teaching Foreign Languages, regular salary at maximum..... | 84 00 |
| 1 grammar teacher, with ten years' experience, and \$5.00 additional for teaching Foreign Languages..... | 85 00 |
| 3 teachers of the eighth and ninth grades and of beginners' classes, at their maximum, with \$5.00 additional for teaching Foreign Languages..... | 88 00 |
| 1 (Mr. Levi Bowman), at Hunter's Point..... | 90 00 |
| 1 (Miss Kelly of Clement Grammar). teaching a ninth grade and receiving \$10.00 extra for yard duty..... | 93 00 |
| 2 (Miss Roper of Webster Primary; Miss Sprague of the Whittier Primary) teaching grammar grades, with \$20.00 extra for yard duty..... | 99 00 |
| 14 (teacher of Cooking, teacher of Spanish, several principals and High School teachers in their first year)..... | 100 00 |
| 8 principals..... | 110 00 |
| 6 principals, including three High School teachers in their second years' experience..... | 120 00 |
| 28 vice-principals, teachers of Science and Physical Culture..... | 125 00 |
| 14 principals..... | 130 00 |
| 13 principals..... | 135 00 |
| 14 assistants in High Schools at their maximum..... | 140 00 |
| 3 principals..... | 150 00 |
| 12 heads of department in High Schools..... | 155 00 |
| 2 principals of Webster and Whittier Primary Schools..... | 160 00 |
| 2 vice-principals at Lowell and Girls' High Schools..... | 165 00 |

NUMBER OF TEACHERS RECEIVING VARIOUS SALARIES—CONCLUDED.

| | PER MONTH. |
|--|------------|
| 17 grammar schools principals and vice-principal of Normal School..... | \$175 00 |
| 1 teacher of Drawing (Miss K. M. Ball)..... | 190 00 |
| 4 principals of grammar schools..... | 200 00 |
| 1 principal of Normal School (A. H. Yoder)..... | 230 00 |
| 3 principals of Lowell, Girls' and Polytechnic High Schools. | 250 00 |
| 869 regular teachers. | |
| 20 day school substitutes | |
| 10 unassigned teachers. | |
| 5 evening substitutes. | |
| 904 Total number of teachers. | |

COMPARATIVE STATEMENT OF THE NUMBER OF CHILDREN IN THE CITY FROM
1888 TO 1895, INCLUSIVE,

As reported by the Census Marshals.

| UNDER SEVENTEEN YEARS OF AGE. | NUMBER. |
|-------------------------------|---------|
| May, 1888..... | 81,171 |
| " 1889..... | 83,314 |
| " 1890..... | 84,531 |
| " 1891..... | 86,493 |
| " 1892..... | 87,774 |
| " 1893..... | 88,567 |
| " 1894..... | 92,026 |
| " 1895..... | 93,558 |

STATEMENT

OF THE SCHOOL FUND FOR THE FISCAL YEAR ENDING JUNE 30, 1895.

RECEIPTS.

| | |
|---|----------------|
| Balance on hand July 1, 1894, less outstanding demands..... | \$62,144 02 |
| City taxes..... | \$384,410 19 |
| Rents..... | 12,225 00 |
| Tuition fees from non-resident pupils..... | 54 00 |
| Sale of old material..... | 60 75 |
| Transferred from coupons of Pacific R. R. Bonds..... | 327 54 |
| State apportionment— | |
| January, 1895..... | \$387,771 30 |
| July, 1895..... | 229,106 50 |
| | 616,877 80 |
| | 1,013,955 28 |
| Total | \$1,076,099 30 |

EXPENDITURES.

| | |
|---|----------------|
| For teachers' salaries..... | \$837,650 48 |
| For janitors' salaries | 48,094 65 |
| For office salaries..... | 7,334 65 |
| For shop salaries..... | 5,650 00 |
| For rents..... | 3,406 10 |
| For books..... | 4,732 29 |
| For stationery..... | 7,371 43 |
| For printing | 2,513 60 |
| For furniture | 22,406 77 |
| For supplies | 4,314 63 |
| For lights..... | 5,725 57 |
| For repairs..... | 19,193 70 |
| For painting and whitening school houses..... | 5,177 24 |
| For permanent improvements..... | 9,220 13 |
| For telegraph service, district boxes, telephones, etc..... | 867 93 |
| For postage..... | 183 00 |
| For fuel..... | 4,545 51 |
| For school apparatus..... | 15,659 73 |
| For water for outside schools..... | 151 80 |
| For legal expenses..... | 1,009 50 |
| For school census | 4,512 78 |
| For advertising..... | 243 68 |
| For incidentals..... | 1,987 31 |
| For erection of buildings..... | 31,114 11 |
| <hr/> | |
| Total..... | \$1,043,066 59 |
| Total receipts..... | \$1,076,099 30 |
| Total expenditures..... | 1,043,066 59 |
| <hr/> | |
| Balance June 30, 1895..... | \$33,032 71 |
| <hr/> | |

SCHOOL FUND, 1895-96.

On April 24, 1895, the Board of Education, as required by law, adopted the following estimate of the amount needed to meet the expenses of the Department during the fiscal year 1895-96, and transmitted it to the Board of Supervisors:

| | |
|--|----------------|
| For teachers' salaries..... | \$890,000 00 |
| For janitors' salaries..... | 50,200 00 |
| For office salaries..... | 7,500 00 |
| For shop salaries..... | 7,020 00 |
| For books (for indigent pupils, etc.)..... | 1,500 00 |
| For stationery..... | 6,500 00 |
| For drawing paper (required by law)..... | 1,000 00 |
| For furniture..... | 20,000 00 |
| For fuel..... | 6,000 00 |
| For supplies..... | 5,000 00 |
| For school apparatus..... | 7,500 00 |
| For repairs..... | 75,000 00 |
| For permanent improvements..... | 23,000 00 |
| For painting and whitening schoolhouses..... | 17,000 00 |
| For rents..... | 4,000 00 |
| For lights..... | 5,000 00 |
| For books for school libraries..... | 3,400 00 |
| For printing..... | 3,000 00 |
| For postage..... | 300 00 |
| For telegraph service, telephones, etc..... | 1,000 00 |
| For advertising..... | 1,000 00 |
| For water for outside schools..... | 200 00 |
| For legal expenses..... | 1,000 00 |
| For insurance..... | 250 00 |
| For school census..... | 5,000 00 |
| For incidentals..... | 2,500 00 |
| For new school lots..... | 17,500 00 |
| For erection of school houses..... | 75,000 00 |
| | <hr/> |
| | \$1,236,370 00 |

Additional estimate adopted by the Board of Education, May 22, 1895, and transmitted to the Board of Supervisors for the employment of four additional teachers of Physical Culture, and the purchase of apparatus and gymnasium equipments... \$10,000 00

Total..... \$1,246,370 00

The Board of Supervisors appropriated \$1,000,200 for the support of the Public Schools for the fiscal year 1895-96. It is estimated that this sum will be received from the following sources:

| | |
|---|----------------|
| From city taxes..... | \$390,200 00 |
| From State school moneys and rents..... | 610,000 00 |
| | <hr/> |
| Total..... | \$1,000,200 00 |

The estimated revenue for the year is as follows:

| | |
|---|----------------|
| Appropriation by Board of Supervisors..... | \$1,000,200 00 |
| Surplus from fiscal year 1894-95..... | 33,032 71 |
| Rent of Lincoln School property, ten months, from Sept. 1, 1895.... | 31,900 00 |
| | <hr/> |
| Total..... | \$1,065,132 71 |

GRADUATES OF THE GIRLS' HIGH SCHOOL.

JUNE, 1895.

| | | |
|----------------------------|----------------------------|----------------------------|
| Ames, Adeline Holman | Doherty, Mary Alicia | Lindsay, Emily May |
| Aronson, Evelyn Kate | Dresbach, Florence Estella | Maginis, Susie Alice |
| Barker, Helen Gordon | Eppinger, Julia | McBride, Elizabeth M. |
| Barrett, Mary A. | Evans, Isabel | McDonnell, Mary Frances |
| Boylan, Mary Loretta | Ewing, Florence N. | McFadden, Mabel |
| Boyle, Edith M. | Fairweather, Annie Blanche | McFeely, Rebe V. |
| Breese, Alice Alma | Fassett, Clara Louise | Metrovich, Mabel |
| Browning, Edith Forbes | Fay, Maude Josephine | O'Connor, Alice May |
| Call, Laura | Friedlander, Cecilia | O'Connell, Lucille Ellen |
| Carew, Martha Magdalene | Geary, Mary | O'Sullivan, Anna Elizabeth |
| Casamajou, M. Adelaide | Herrin, Caroline Belle | Patten, Maude, Elizabeth |
| Cassinelli, Mary Clorinda | Goldtree, Haldee | Prosek, Emma |
| Cereghino, Josie Celestine | Hall, Lucy Emma | Root, Mabel Adele |
| Chalmers, Grace Blethen | Heapby, Minnie C. | Ryan, Mary Cecilia |
| Coey, Emily Reynolds | Hohfeld, Lily | Seibel, Mary Elinor |
| Cohen, Helena | Hohfeld, Rose | Sellon, Grace Edith |
| Cohen, Gertrude | Hollaren, Nellie Louise | Sharp, Caroline Agnes |
| Cunlugham, Emma B. | Holling, Louise | Sorbier, Josephine Marie |
| Conway, Loretta | Hyman, Maude | Stack, Katherine Gertrude |
| Costa, Henrietta B. | Johnson, Bertha Estelle | Stack, Helena Monica |
| Coulter, Anna D. | Johnson, Linda | Stone, Jessie Elise |
| Davidson, Estella Ruth | Kennedy, Ethel Imigene | Sturges, Lorena Alice |
| Davidson, Jean Florence | Kurtz, Texaina Tyler | Sweet, Mabel |
| Davies, Mary Isabelle | Kyne, Mary Gertrude | Wemple, Muriel |
| Davis, Grace Ives | Lahaney, Marie Loretta | Wendell, Susan Saville |
| Davis, Florence | Larios, Letitia Ellis | Wolters, Doratheia H. |
| Dimond, Susie A. | Lewis, Minnie J. | Zeile, Rose Marie |

NON-GRADUATES WHO HAVE COMPLETED PARTIAL COURSES.

| | | |
|------------------------|-----------------------|-----------------------------|
| Blake, Mary Eastman | Milliken, Hattie May | Stewart, Lyllian Charlesena |
| Coblentz, Pauline A. | Nolan, May | Sullivan, Elizabeth |
| Cornish, Maude West | Perkins, Ethel Lolita | Werthelmer, Sophie |
| Dolan, Frances Mary | Roth, Nettie N. | Westerfeld, Olga |
| Hess, Florence | Sheideman, Grace A. | Weule, Hertha Emily |
| Heyman, Olga | Slomsky, Annette | Wightman, Georgie Moffatt |
| Johnstone, Anna Sophia | | |

GRADUATES OF THE SAN FRANCISCO NORMAL SCHOOL.

JUNE, 1895.

| | | |
|---------------------|-------------------|--------------------|
| Brandenstein, Belle | Hofmann, Eliz. | O'Neil, Florence |
| Bachman, Alice E. | Hayes, Louisa | O'Connell, Agnes |
| Barman, Marie | Hershberg, Hattie | Pleasant, Alice |
| Bryant, Alice E. | Hirstel, Aimee | Regan, Christina |
| Barieau, Minnie | Joseph, Hattie | Roulean, Blanche |
| Brown, Gertrude | Keegan, Mamie | Rotjer, Lillian |
| Brennon, Hattie V. | Kress, Anna M. | Roesman, Ida |
| Claiborne, Josie E. | Kennedy, Julia M. | Rixon, Eliza |
| Carter, Aurelia R. | Kennedy, Maude | Robinson, Mary C. |
| Coffey, Julia C. | Lanigan, May | Reyman, Miss J |
| Clayburgh, Carrie | Laporte, Claire | Small, Ella A. |
| Cadwalader, Edna | Lefler, Josie | Sullivan, Fannie |
| Coblentz, Eda | Levingston, Helen | Sullivan, Margaret |
| Donovan, Kate | Levy, Miriam | Skahaen, Lillian |
| Duffy, Hannah M. | Lacoste, Eugenia | Stevens, Irene |
| Dunne, Alice L. | Lobree, Rebecca | Simmons, Helen |
| Donohue, Alice | Lewison, Celia | Shine, Margaret |
| Edwards, Minnie | Murphy, Alice | Stevenson, Maude |
| Flint, Agnes | Miles, Kitty | Sutton, Alice G. |
| Flood, Maria L. | McDermot, Ella | Thellar, Olive E. |
| Folsom, Mae L. | Murray, Bessie | Treadwell, Laura |
| Gaines, Kathryn | Martin, Anita G. | Verdenal, Cora |
| Gillan, Eliz. C. | Maguire, Margaret | Vanderzweip, Marie |
| Herrick, Cora | Morris, Daisy | Urquhart, Effie |
| Heald, Jennie | Moore, Ada H. | Wright, Mary A. |
| Hay, Lenora A. | Manning, Evelyn | Ward, Ellen |
| Haack, Matilda | Onyon, Anna | Walsh, Mary U. |
| Hensel, Ellen M. | O'Brien, Lizzie | Wise, Mabel N. |

GRADUATES OF LOWELL HIGH SCHOOL.

MAY, 1895.

| | | |
|------------------------|------------------------|--------------------------|
| Abraham, Josephine | Friedlander, Howard J. | Pooley, Edith M. |
| Aldersley, Edna | Gamage, Harry C. | Read, Cora J. |
| Armstrong, Frederic J. | Gibbons, H. Walter | Rosenberg, Abe |
| Bachelder, William H. | Hedger, Harry | Rosener, Leland S. |
| Baumeister, Edward E. | Hess, Sigmond | Rothermel, Elizabeth |
| Belcher, Robert | Houston, Charles J. | Rulofson, Alfred C., Jr. |
| Blum, Edna | Houston, William Hart | Schmitt, Lionel S. |
| Bonnell, Edith | Howard, Zerah S. | Schroth, Charles A. |
| Brand, Ernest | Ingalsbe, Stanley | Scott, Wesley B. |
| Burke, John K. | Kalisky, Henry J. | Sitton, C. Guerdon |
| Burr, Elsie | Lawrence, Constance | Smith, Woodley B. |
| Castelhun, Paul | Leahy, Madaline B. | Soule, Abigail E. |
| Cerf, Emilie | Levensaler, Caleb | Stebbins, Horatio W. |
| Clayburgh, Herbert E. | Mackenzie, James A. | Stevens, Will E. |
| Crocker, Louise N. | Marvin, Harvey LeF. | Swan, Earle C. |
| Cross, Harry J. | McKinne, Cornelia | Symmes, Harold S. |
| Denvir, Nicholas A. | McLaren, Donald | Thompson, Lucia B. |
| Dibble, Oliver | McLellan, Edna B. | Thompson, Nelson W. |
| Donnelly, Jennie | Meyer, Abe L. | Von der Lieth, Olga |
| Dow, Edwin T. | Meyer, Martin A. | Wiel, Samuel C. |
| Eckart, Nelson A. | Miller, M. Henry | Wilkie, Frances A. |
| Ede, William, Jr. | Mordecai, Clara | Wood, Norton E. |
| English, Virgie L. F. | Peters, Emil C. | Wright, Mertie A. |
| Epstein, Saul | Phillips, Joseph J. | Young, George J. |
| Evans, Perry | Poheim, Joseph F. | Young, Minnie H. |
| Franklin, Philip J. | Polhemus, John H. | Zeile, John |
| Fritz, Jessie E. | | |

GRADUATES OF THE POLYTECHNIC HIGH SCHOOL.

JUNE, 1895.

THREE YEAR DIPLOMAS—HONORABLE MENTION.

| | | |
|-------------------|-----------------|---------------|
| Heslep, Clara Ada | Ticoulet, Alice | \| Walsh, Fannie |
|-------------------|-----------------|---------------|

THREE YEAR DIPLOMAS.

| | | |
|-------------------|--------------------------|-----------------|
| Bernstein, Bertha | Luckhardt, Gertrude Irma | \| Nolan, Mamie C. |
| Folsom, Maude | McInerney, Eva I. | \| |

THREE YEAR CERTIFICATES.

| | | |
|-------------------|--------------------|-----------------------|
| Garns, William F. | Pryor, Maggie | Kelly Josephine Glynn |
| | Wilson, William C. | |

TWO YEAR DIPLOMAS—HONORABLE MENTION.

| | | |
|--------------------|---------------------|------------------------|
| Baker, Edward Paul | Edwards, Lena | Kingston, Katie M. |
| Burns, Herbert | Goldsmith, Henry M. | Kirman, Richard |
| Cahn, Nathan | Gross, Josephine | Krukau, William Jullu |
| Chase, Nelle | Harris, Beatrice | O'Rourke, Josephine L. |
| Cohen, Eva | Harris, Ray | O'Rourke, Nellie P. |
| Crim, Samuel M. | Heger, Alma | Savage, Grace Isabel |
| d'Erlach, Otto | Heim, Johanna E. | Voy, Genevieve M. |
| Dorgeloh, Anna F. | Hoppe, Esther | Yrigoyen, J. I. |

TWO YEAR DIPLOMAS,

| | | |
|-----------------------|-------------------------|-------------------------|
| Adamson, Robert | Harrington, Nellie A. | Murphy, Kathicen J. |
| Baer, Sam | Harrington, Susie R. | Newman, Julian S. |
| Baldwin, Blanche G. | Healey, William W. | O'Brien, May |
| Barr, Francis A. | Hegler, Edwin C. | Oliver, Flora |
| Baumberger, Edwin J. | Holland, Kittie | Oppenheimer, Selby C. |
| Beaton, Peter J. | Holzheiser, Fred G. | Peters, Eggert E. |
| Beruard, N. Lucille | Jones, Ulysses D. | Poultney, Georgie |
| Boradori, Willam J. | King, Mabelle J. | Riley, Marguerite I. |
| Bradford, Ethel S. | Knight, Beatrice | Robertson, Katie C. |
| Breslauer, Rose | Kralmer, Julian | Rosenberg, Regina |
| Burns, Mary A. | Kroenke, Edward B. | Salter, Daisy E. |
| Campbell, Sybil J. | Lachman, Gustave M. | Samuels, Rose |
| Carl, Andrew A. | Lauer, Violet D. | Sanders, Fannie N. |
| Clawson, Emma May | Lauinger, Frank Charles | Scott, Peter F. |
| Conn, Frank W. | Lawrence, Frank Warren | Severns, Ethel A. |
| Cullen, John J. | Lee, Frank P. | Sewell, Dottie Mira |
| Cusick, Nora Beatrice | Lewin, E. Isabel | Sherwood, Florence J. |
| Depew, William Harris | Lord, Fannie | Sierck, Frederick B. |
| Dinan, Timothy John | Malde, Harry | Smith, Adam |
| Dowling, Joseph A. | McAllister, Estelle J. | Smith, Julia |
| Forbes, Lulu Frances | McDermott, Celia E. | Stolz, May Charlotte |
| Gardner, Sadie | McDermott, Kittie A. | Thomason, Maude Estelle |
| Gilmore, Charlotte M. | McFadden, Lizzie C. | Walworth, Martha J. |
| Greenbaum, Albert | Miller, H. Clay | Ward, John T. |
| Guerin, Annie L. | Moore, Nettie E. | Whyte, Malcolm C. |
| Hall, Cornelius | Morton, Howard E. | Weiner, Alice |
| Hamburger, Stella | Mulligan, Thomas A. | Wistrand, Hilma C. |
| Harrigan, Andrew L. | Murphy, Frank L. | Wolf, Daniel L. |

TWO-YEAR CERTIFICATES.

HONORABLE MENTION.

Tilton, Laura Edna

Valentine Hannah

| | | |
|--------------------------|------------------------|--------------------------|
| Andre, John Lewis | Falch, Otto E. | Neueld, Edward B. |
| Becker, Louise | Felvey, Edward | Nichols, Richard |
| Beirao, Manuel | Flinn, Edward | O'Connor, Richard |
| Bening, Amy D. | Georg Ada | Oyen, Josephine |
| Berry, Lila Henry | Guerrine, Fred | Pernau, Marian |
| Blanchflower, Arthur L. | Hammersmith, Alfred S. | Reidy, John A. |
| Boomer, Preston H. | Johns, Nelle Elizabeth | Sanders, Annie Ernestine |
| Bozio, Erminio A. | Knippenberg, Frank R. | Schwartz, Henry |
| Campodonico, Eugene J. | Kuhls, Lulu N. | Tabrett, May |
| Carstensen, Fritz Andrew | Lamont, William | Tannian, Annie |
| Charmak, Julia | Leonard, Walter | Tiddy, Frank William |
| Curtin, William Lawton | McInerney, Nicholas | Tracy, Ada Emily |
| Day, Edythe L. | McMahon, James. | Wheelan, Alber |
| Dorgan, Thomas A., | Minigan, Laura A. | |



